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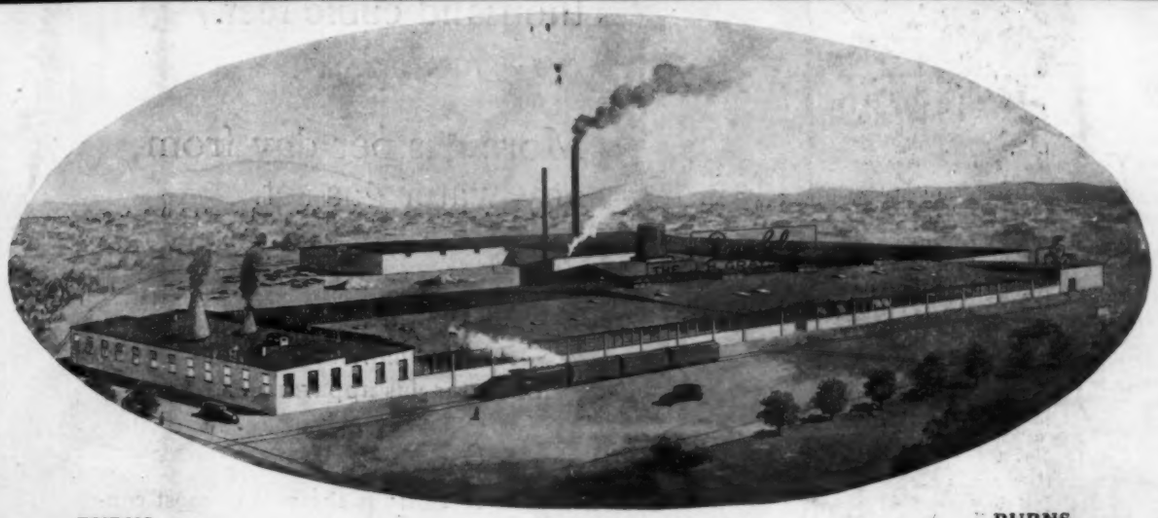

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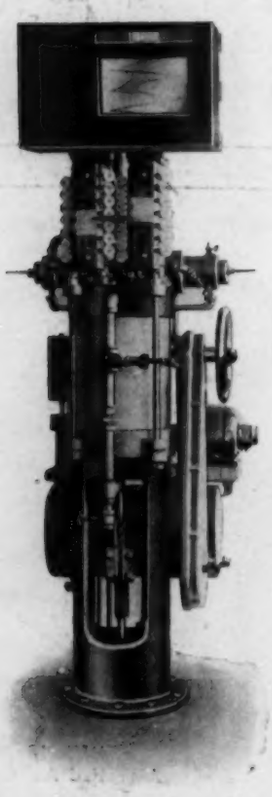

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American Gas Journal

SIXTY-THIRD YEAR

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WALTER A. FAIRSERVIS, Editor

Ismar Ginsberg, Associate Editor

Western Office, Peoples' Gas Building, Chicago, Ill.—Roy W. Brown, Manager
Harrison 5938

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Gas Distribution

Suggestions for Standard Installations

By A. W. H. GRIEPE

One of the most important links in the gas industry is the distribution system, as the greatest losses occur in the mains; the following article shows some standard installations, etc., and as there are at present no accepted standards for installation of this character in the gas industry, this article may be the means of starting a discussion for adopting of one or more of the shown connections as standard installations to be used throughout the gas industry, making all pipe work as near as possible uniform.

Of course, we realize that we are very far from a uniform standard, but I believe it will be accomplished in the near future. The connections shown can be adapted for high and low pressure distribution.

Figure 1 shows a cement joint for bell and spigot pipe for low-pressure distribution. Specifications for installing this joint may be summed up as follows:

All pipes should be inspected for cracks and flaws, just previous to placing in trench. All bell and spigot ends must be cleaned and freed from dirt and moisture before placing together.

Inside of bell and outside of spigot ends should not be coated with tar or any other preparation.

After spigot has been inserted in bell an iron wedge should be driven between bell and spigot on under side of pipe, to center spigot in bell. There should be a free, even space between bell and spigot on all sides of pipe. Take sufficient number of strands of caulking yarn to fit tightly between bell and spigot, twist same together forming a rope, and drive into opening with yarning iron until forced evenly and firmly against head on spigot. Care should be exercised not to drive yarn beyond head. Take sufficient quantity equal parts of Roman and Dyerkoff cement, thoroughly mixing same together; wet with cold water until the consistency of putty; fill cavity with this mixture, forcing same back against first yarn; after cavity is thoroughly filled with cement drive a second ring of caulking yarn into cement forcing same back with caulking hammer and yarning iron. Fill cavity flush with cement and finish face with small trowel as shown on Figure 1.

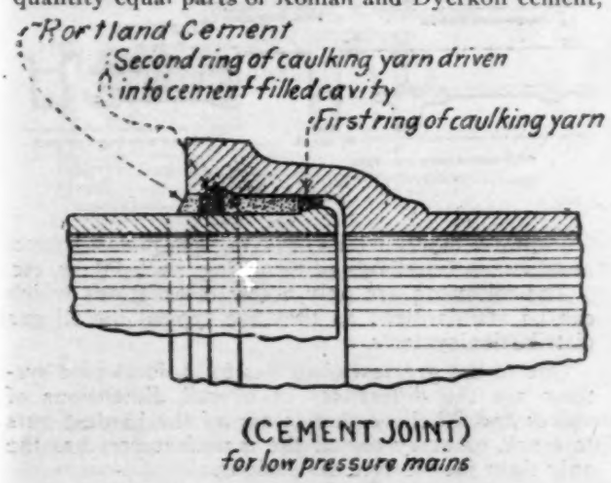

Portland Cement
Second ring of caulking yarn driven into cement filled cavity
First ring of caulking yarn
(CEMENT JOINT)
for low pressure mains

Figure 1

Where only a limited amount of time is available for making joint, use only the Roman cement, as same will set sufficiently to allow of turning on the gas in about fifteen minutes.

Figure 2 shows a lead joint for bell and spigot pipe universally adopted by leading gas companies for high and low pressure distributions.

When installing this pipe the following points should be observed:

Prepare as for bell and spigot cement joint, thoroughly caulking in a sufficient number of rings of yarn to bring the cavity from two inches to two and one-half inches in depth. Fill the remainder of cavity with molten lead or lead wood, caulking same tight with tool and hammer. After completed and pressure is on, test joints for leaks with soap and water with brush.

Flanged Pipes

The following specification for the installation of flanged pipes have been adopted by some of the leading gas companies:

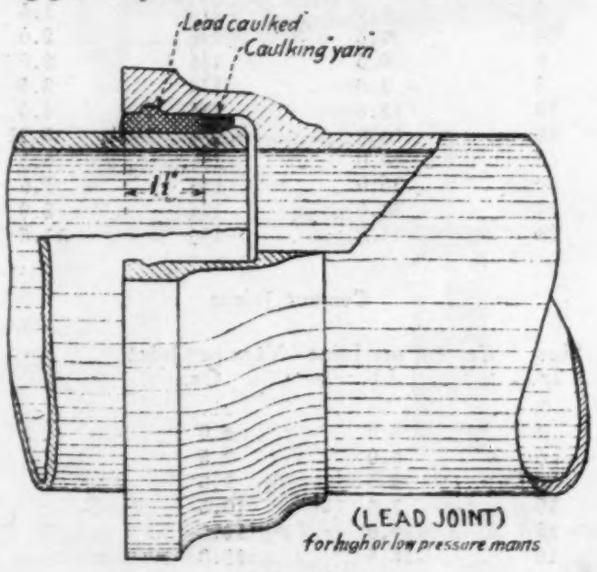


Figure 2

Face of all flanges must be tooled.

Remove all rust, scale, dirt or rough spots from face of flange.

Spread with small trowel evenly over face of flanges from one-sixteenth inch to one-eighth inch thick, a mixture of equal parts of white lead, ground in oil, and dry powdered red lead mixed to a consistency of soft putty with boiled linseed oil. Flanges should be placed directly together with as little sliding motion as possible. Use two cut washers with each bolt—one under head and one under nut.

Grommets—Place a grommet made of candle wicking dipped in the mixture of red, lead and oil, a little thinner than used for face of flanges, under each washer. Tighten nuts, on bolts evenly all around.

Test—After twenty-four hours have elapsed since making joint and pressure has been turned on, test joints with soap and water with brush.

Figure 3 shows the amount of materials used when making up joints as per Figures 1 and 2.

Cast-Iron Gas Mains—Joint Material

Cast-Lead Joints

Size	Lead per Joint	Depth of Lead	Yarn per Joint
In.	Lb.	In.	Oz.
3	4.5	1½	1.5
4	6.0	1½	2.0
6	9.0	1¾	2.5
8	12.0	2	3.0
10	15.0	2¼	3.5
12	22.0	2¼	4.0
16	36.0	2½	4.5
20	50.0	2½	5.0
24	62.0	2¾	6.5
30	75.0	3	...

Lead-Wool Joints

Size	Lead Wool per Joint	Depth of Lead Wool	Yarn per Joint
In.	Lb.	In.	Oz.
3	3.0	1⅛	1.5
4	4.5	1⅛	2.0
6	6.5	1⅛	2.5
8	9.0	1⅛	3.5
10	12.5	1⅛	4.0
12	14.0	1⅛	5.25
16	20.0	1¼	6.5
20	25.0	1⅜	7.0
24	36.0	1⅜	8.0
30	45.0	1½	11.5

Cement Joints

Size	Cement per Joint	Yarn per Joint
In.	Lb.	Oz.
3	...	...
4	3.5	6.0
6	5.0	7.5
8	6.5	9.0
10	7.5	10.5
12	10.0	12.0
16	12.5	17.0
20	15.0	30.0 (5-in. bells)
24	20.0	36.0
30	28.0	50.0 (7-in. bells)

Figure 4—Recently steel bell and spigot pipe has been placed on the market, which promises to be used to a great extent inside the gas plant for overhead piping on account of its light weight as well as on account of the cooling effect due to the very thin pipe walls, especially for the hot gases leaving the apparatus.

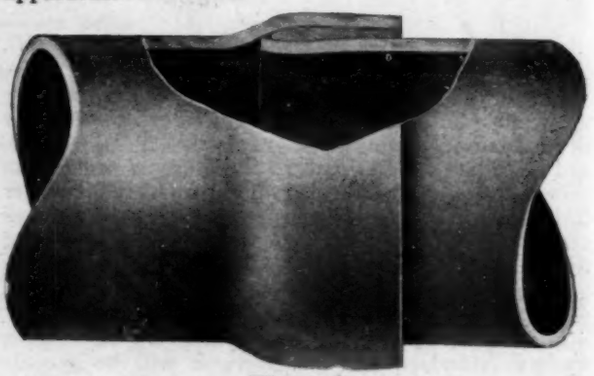


Figure 4

The joint, the result of years of experimenting, has proved to be a success—staying tight under 600 lb. hydrostatic pressure.

The cost of installing these pipes is lower as compared to cast-iron pipes, due to its light weight and the reduction in the number of joints by using pipe lengths of 36 to 40 ft.

These steel pipes should be used for overhead work only.

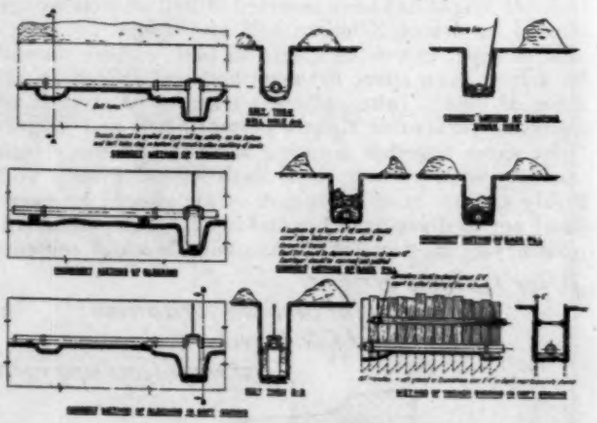


Figure 5

Figure 5 shows details of laying gas mains, correct and incorrect methods of trenching, back filling, etc.

The following are only a few installations which can be standardized as they are typical for all gas distribution systems.

One of the greatest obstacles to uniform pipe systems are the differences in overall dimensions of valves and I believe that is one of the hardest nuts to crack, as every one of the manufacturers has the only right face-to-face dimensions.

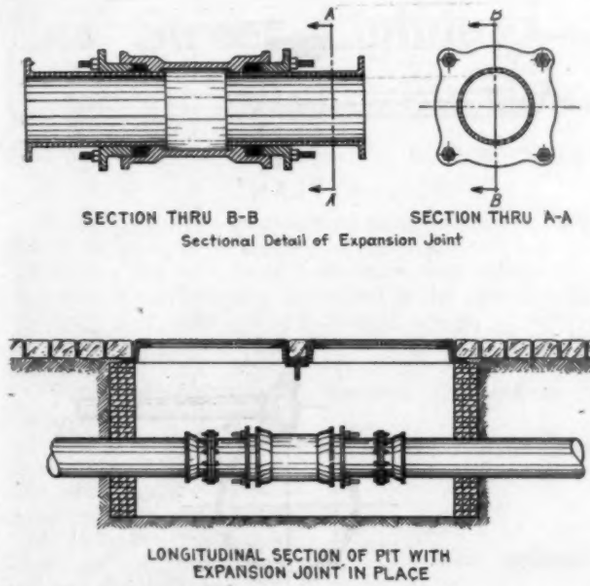


Figure 6

Figure 6 shows a typical gas main expansion joint manhole.

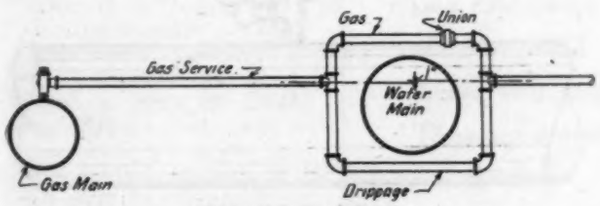


Figure 12

Figure 12 shows a method of passing an obstruction with gas service pipe.

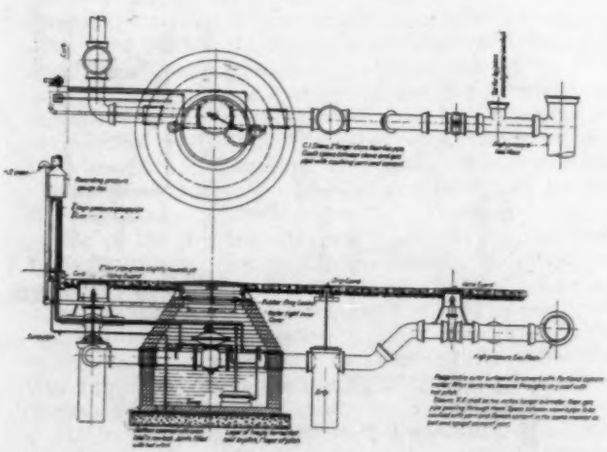


Figure 7

Figure 7 shows a typical manhole, connection from high-pressure main to service pipe through governor, pressure-recording gage, etc.

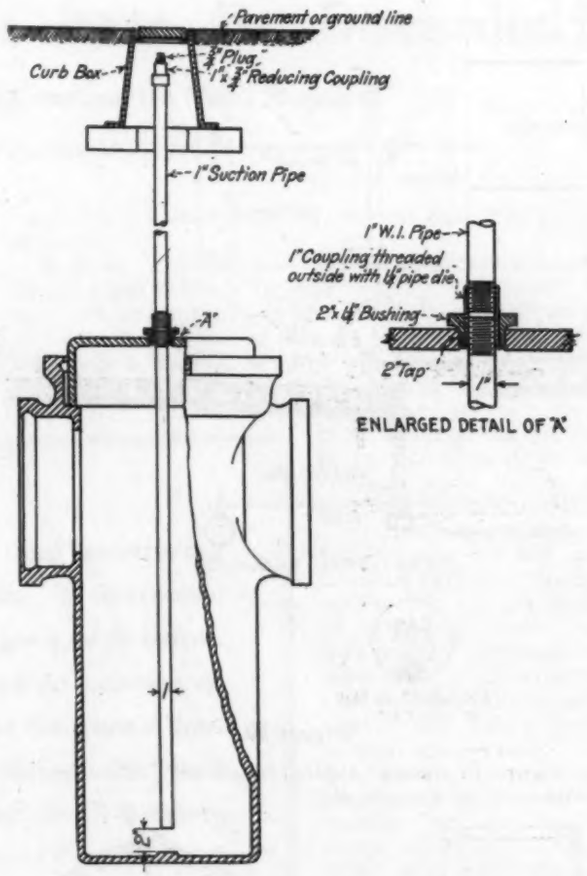


Figure 8

Figure 8 shows a low pressure gas main drip pot.

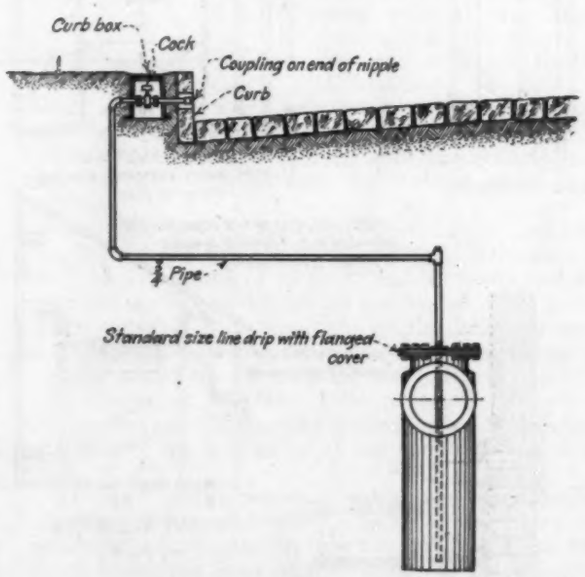
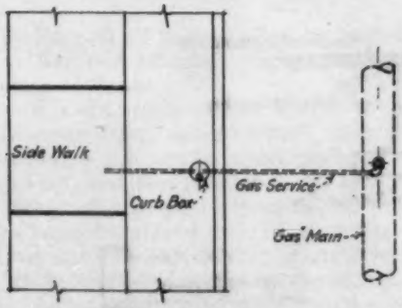


Figure 9

Figure 9 shows a high pressure gas main drip pot and blow-off connection.



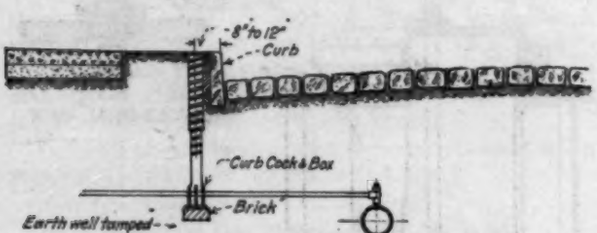
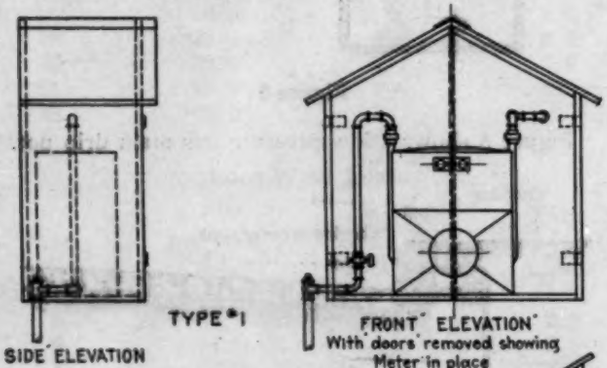


Figure 10

Figure 10 shows a typical house service connection with curb box, cock, etc.



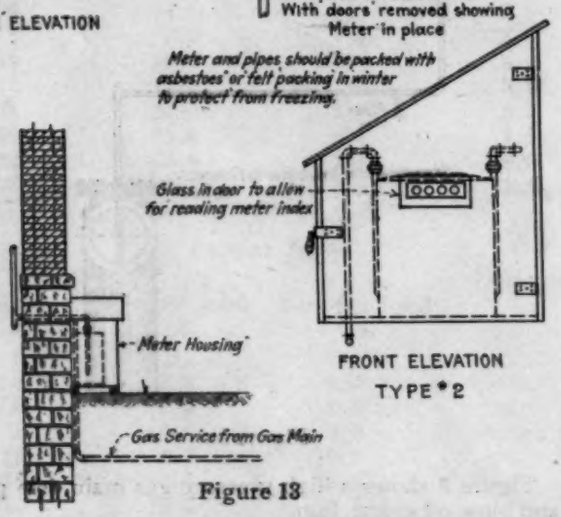
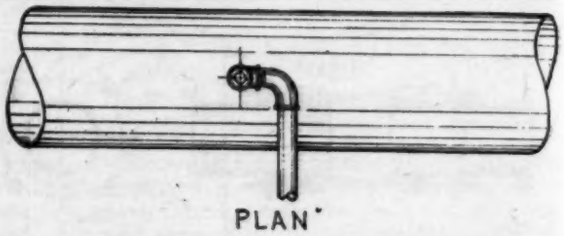
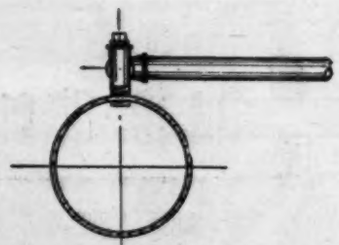

Meter and pipes should be packed with asbestos or felt packing in winter to protect from freezing.
Glass in door to allow for reading meter index
Meter Housing
Gas Service from Gas Main
FRONT ELEVATION
TYPE "2

Figure 13

Figure 13 shows a typical outdoor meter housing





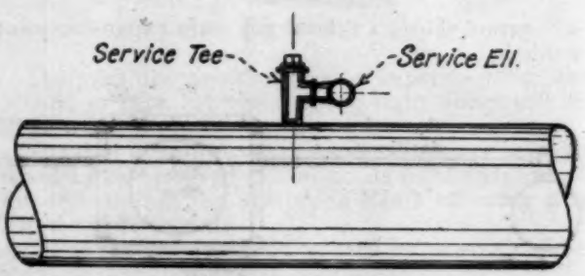


Figure 11

Figure 11 shows a high and low pressure service tap.

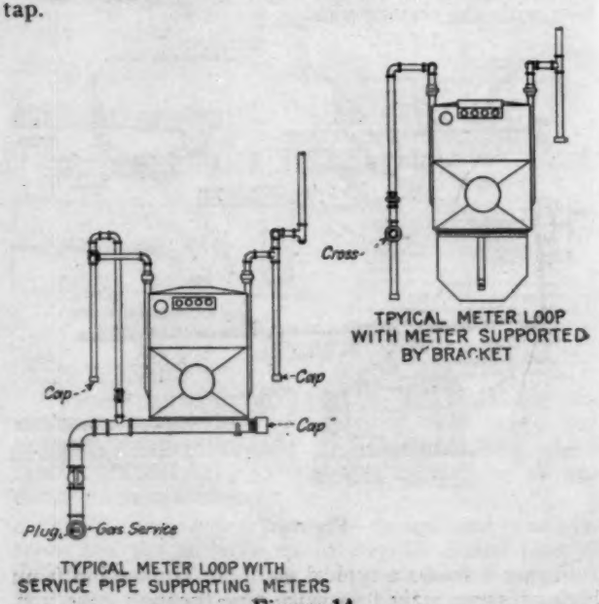


Figure 14

Figure 14 shows a typical indoor meter installation.

Gas Street Lighting — Is It to Be Discarded?

An Array of Facts That Must Convince the Most Skeptical

By F. VICTOR WESTERMAIER

In raising such a question as this, one might ordinarily be accused of dealing in absurdities. Yet the conditions are and have been such that unless this question is emphatically answered in the negative the industry will soon lose, by default, a field of service in which its product has had a long and honorable career.

This is more essentially a question of the industry's policy toward public service than it is of equipment and apparatus. No matter what that policy is or may be, it unquestionably will have far-reaching effects on the future progress of the industry.

The purpose of all things is to serve, either for good or bad, but the good servants, often not appreciated, have the priceless value of indispensability. Because they are indispensable, and therefore always at hand, their real value is often overshadowed by the charm and allurements of newer and less familiar things. It is through the insistence and perseverance of those that know and realize the value of the indispensables that civilization progresses.

The splendid and convincing facts that Mr. Westermaier brought out in his speech before the New England Association of Gas Engineers at the annual convention held during the past week, will appeal to all gasmen. They are worthy of deep thought. —Editor.

The ancient and the modern sages have expressed just what others, in the future, will reiterate. The value of all teaching lies in the understanding and application of the principles by those taught.

It is impossible to overestimate the tremendous service that the gasification of coal has rendered to civilization or its effect on the conservation of our priceless fuel for generations to come. There is more chance for error that its scope and field may be underestimated.

We of the gas industry must answer for our husbandry; our service to the public and to ourselves must not be greater than to our chosen field. Can we cheat it and still consider ourselves true to our trust because we have supplied the public with what it demanded of us and on the returns have fed and clothed our families? It is our duty to see that the fullest measure of the industry's service is rendered.

As in all things, progress is a measure of service rendered. Competition in trade is likewise a matter of comparative service. If, in the gas and electric industries, each provides the maximum of service their respective products afford, then, instead of destructive competition there will come, as it must in time, mutual understanding, respect and, finally, cooperation.

Because electricity has become so potent a factor in the same fields of lighting, heating and power, it does not imply that gas has lost its potential power to serve in any one of these. If it does, then how long before the gas industry will have to interrogate itself, as in this instance on lighting, in regard to heating and power? As it is pertinent to the subject of our discussion, let us consider the course of lighting, gas and electric.

Up until the introduction of the electric arc lamp in 1876 and the incandescent electric lamp in 1878, gas reigned supreme for illuminating purposes. The charm of these new illuminants caught the public favor almost immediately. In comparison, gas lighting, because of long years of familiar use, was looked down upon as old-fashioned and, until the advent of the Welsbach mantle in the early nineties, was being displaced rapidly. The monopoly so long enjoyed was gone forever, and the future of the gas business looked dull indeed. The new era of gas lighting started auspiciously; the public was seemingly just as much surprised and pleased with this new thing as it had been with the electric, and took up with enthusiasm the newest fashion in lighting.

From this time on the competition of gas and electric illuminants has raged incessantly. Electric carbon filament lamps of 16 to 32 candle-power did not meet the service of Welsbach gas lamps of 60 to 100 candle-power. The scientists of the industry were spurred on to overcome this handicap, and in an incredibly short time multiplied the lighting power of their lamps, at the same time reducing the cost of service, because of increased efficiencies, to less than one-fifth of the original cost per candle-power delivered.

As most of the research work was concentrated, whenever a new discovery was made the news was spread broadcast, and in time the public became educated along the lines of the slogan of the industry: "If it is not electric it is not modern."

During this same period the service value of salesmanship was being developed through the free ex-

change of burned-out carbon filament lamps and the sale at reduced prices of the newer metallic filament lamps by the local central station companies. In every way the public was shown how well it could be served through electric lighting.

What were the gas companies doing in the meanwhile?—giving away and encouraging the use of open-flame tips! The efficient mantle lights were sold to the consumer, on request, at the usual retail prices. There was no concentration in research work and consequently no publicity.

In 1921 the committee on gas lighting of the American Gas Association reported that the best availabale information on the subject indicated that of all gas sold the proportion used for lighting was about 20 per cent; this represents a tremendous volume of business on present investment. It cannot be transferred to any other field without entailing additional capital investment and an increase in sales cost, with subsequent disturbing effects on rates.

It takes considerable persuasion to convince the average hard-headed, common-sense householder that he needs a 100-c.p. electric lamp when he already has a satisfactory 60-c.p. gas lamp, if to get it he must make a considerable expenditure for wiring his house. But if his 60-c.p. gas lamp is always out of order or adjustment and the flames in his open-tip burners are reduced as they have been in the past few years, he gets mad, hangs the expense of the wiring on his grudge against the gas company, and becomes an electric partisan. That man is no longer a prospect for anything related to gas; he feels that he has been cheated! And yet, with our convictions in regard to the sterling qualities of our product and the possibilities for its development, the wisdom of the sages would interpret this failure to give full service as cheating the industry instead.

The Record in Street Lighting

The record of gas in street lighting is somewhat different from that of private or domestic lighting: it has been of a more virile, militant nature. Whatever measure of success it has attained has been largely due to the fact that it had the power to demonstrate such excellent service qualities in comparison with electric lighting that with all the pressure brought to bear by the competitive illuminants it has survived, even in the face of popular fancy that it is "old-fashioned."

It has not been favored with the entrenchments nor the tremendous field that private lighting enjoys. The field of street lighting is limited to communities as units instead of the manifold requirements of individual consumers, and in extent to the appropriations provided. Furthermore, as street lighting is contracted for, in many cases annually, under specifications requiring the delivery of measured service, it is, as a business, more or less hazardous. It requires considerable investment of capital in standards, lamps and accessories, in addition to operating capital. Full service and satisfaction must be given, or penalties, if not complete loss, are the result.

The pressure of electric competition can be appreciated when it is realized that the electric industry has always considered street lighting a most profitable field for the widest public advertising of its lighting business, and that financial losses incurred between the receipts for service and the actual cost thereof, including the overhead expense on transmission lines and equipment, could be properly charged against advertising expense.

In the past ten years, due to the continual development of more efficient lamps, many changes in equipment have been made, so that for street lighting the newest units might be shown; but the cost of making these changes, while it has materially increased depreciation charges, has not been reflected in increased service costs to the cities. The reason for this is probably due either to the competition of gas lighting or to a desire to make electric lighting all the more desirable to the cities for further extensions.

In using street lighting as a means for influencing the public mind by what the eye sees, indicated an understanding of advanced salesmanship. The effectiveness of this policy on their domestic commercial business must be worth all it costs.

Incandescent gas street lighting had its beginning in this country in 1896 with the installation in that year of 285 lamps; its growth for a period of eighteen years was phenomenal, reaching its maximum in 1914 with a total of over 230,000 lamps.

With incandescent lighting came a new order of things in gas street lighting; the retirement of gas companies as municipal lighting contractors and the evolution of service organizations whose sole business is to use the gas of the local companies in carrying out their contracts for gas street lighting service. How well this arrangement has succeeded is shown by the fact that in no large city where the street lighting was taken over by the street lighting company has the use of gas in that field been eliminated, and today 200,000 incandescent mantle lamps in approximately 180 towns and cities from the Atlantic to the Pacific are maintaining the best traditions of gas lighting in direct competition with electric lighting service, and in spite of the widespread propaganda to eliminate gas as an illuminant.

The Annual Consumption

The total annual consumption of gas by these street lamps is approximately 3,000,000,000 cu. ft., sold by the local gas companies to the cities, either directly or indirectly through the service companies, at the maximum rate charged the smallest domestic consumer, in the majority of instances.

To maintain gas in the field of public service the companies engaged therein have had to obtain, for necessary investment in service plant, factories, organization, etc., millions of dollars in capital on which the financial return in the last few years has been sadly out of proportion to the risks assumed and the energy expended.

This particular phase of the situation is cited solely to bring out the staunch loyalty of these organizations to the gas industry. Not only financially, but in the personal service rendered, they have demonstrated their confidence and faith in the industry served and in the real service value of gas for lighting.

In this country the gas street lighting units in service range from 50 to 150 c.p. in size. In Europe, gas street lamps range up as high as 4,500 c.p., and in such cities as London, Paris, Berlin and Vienna gas is the predominant illuminant for street lighting, principally because the policy of the gas industry over there has been to encourage to the fullest extent the use of gas for the same indirect results to be obtained

as is the policy of the electric industries in America, which has been described.

Notwithstanding the limitations placed on the advancement of the art of gas street lighting in this country, very determined efforts have been made by the service organizations to do the best they could with what they had in meeting the popular demand for increased illumination as well as the architectural treatment of street lamps. They have also refused to have gas eliminated when the inauguration of new systems of street lighting essentially designed for electric illuminants threatened to drive gas from the field. Just two instances need be cited here to demonstrate this point.

Gas Refractor Lamps—Shorewood, Wis.

The city of Milwaukee, Wis., a few years ago, becoming thoroughly dissatisfied with the electric street lighting service rendered by the local company, decided by popular vote to install an entirely new system at the expense of and to be maintained by the municipality.

At this time there were in service, in addition to the usual types of electric street lamps, several thousand upright mantle gas lamps. In the adopted street lighting plan all these units were to be displaced by the municipal system.

The record of many years of satisfactory service held by the gas lamps received sufficient recognition from the municipal authorities for them to inquire whether or not it would be possible to utilize gas in the new units. And at the time the subject was receiving the widest publicity, and before bonds were issued for carrying out the work the Engineers' Society of Milwaukee appointed a committee on lighting to examine the proposed plan and make a report. In this report was the following recommendation:

"The committee feels that gas can well compete with electricity for residential street illumination. The committee therefore favors a relatively large number of gas units, as the investment for gas units is smaller than that for equivalent electric units. The operating cost decreases rapidly with increasing number, and if the units are properly distributed the operating cost compares favorably with that of electric units. Furthermore, the extensive installation of gas

(*Continued on page* 168.)

The Selling of Coke*

The Home Market Should Be Developed

By JOSEPH R. McKNIGHT

Coke should be sold in the home market. The nearer the customer's bin is to the cone pile in the gas works yard, the larger the return to the gas company. The territory supplied with gas should be exploited to the limit to find coke customers. Every effort should be made to educate the householder and bring about home consumption.

At home, coke comes into competition only with hard coal or whatever fuel is used for house heating purposes, usually upon which high freight rates have been paid. When you load coke onto cars and send it away, similar high freight rates have to be paid in addition to unloading charges and loss by breakage which takes away from the return.

When the home market is properly developed it becomes a permanent outlet for coke. But when coke is shipped into other territory it is in competition with coke made in that particular section or that shipped in from other sections, and everything else being equal it becomes merely a question of price. The business is not permanent and quite unsatisfactory for all concerned.

How to Develop the Home Market

There are two classes of customers to be found in the home market: First, the industrial users, and among these will be found the bakers, and before going on let us say a word about them. This trade should be carefully looked after and their interests guarded jealously. They are all year 'round users and you can make, without very much effort, every baker in your section a permanent customer. Coke is ideal for bakers' use, kindling easily and giving off heat quickly, thereby getting the ovens ready for use in a much shorter time than with hard coal. It is also cleaner to handle and makes less ash to contend with. In New Haven we supply ninety out of one hundred bakers using hard fuel. We take care of the interests of all from the largest, who uses 150 bushels or about three tons daily, to the little fellow who uses one ton per week. If they go short and want coke delivered quickly, we place their order ahead of others and see that they are provided for. During the days of coke shortage the bakers were the last to feel the pinch; we cut off the supply to the householder to make delivery to bakers.

Hotels and laundries can be made customers upon the argument that coke is a clean smokeless fuel. Chinese laundries, too, have been a source of much business with us.

Florists also can be made users when they have been using hard coal.

Galvanizing plants use nothing but coke, either gas or foundry coke; the gas coke will do the heating as well as the foundry coke. Plants that have annealing japanning and core ovens also can use coke to advantage. Large brass foundries use it for kindling purposes for the reason that it kindles much more quickly and readily than the oven coke, thereby making a saving.

The Second Class

The second class of local customers is a part year user; that is, the householder for house heating. This business does not amount to much during June, July and August. While going through the industrial de-

*Paper read at annual meeting of New England Association of Gas Engineers.

pression all over the country, about the only place where coke was sold was to the householder. This should be reason for all to get behind the movement to develop the home market.

In New Haven we have never urged very strongly the use of coke in stoves or ranges; it can be used provided the fire box is of sufficient size and carries enough coke to run a reasonably long period. We have, however, devoted our time to the use of coke in house-heating furnaces, and have found that the ordinary furnace is suitable for using coke. We have never found a furnace in our section but could be run satisfactorily on coke; this applies to hot air, hot water or steam heating plants suitable for household use.

In starting out to develop the household trade the first point of attack should be your own company; every person drawing salary or wages from the gas company which has coke for sale should be encouraged and extra effort made to persuade them to use coke. All should be interviewed, from the office boy through the executive officers to the board of directors and from the works "terrier" to the engineer. The reason for their using it should be strongly told, that coke is the main by-product of the gas industry and that in using coke they aid themselves and the company.

Unless those who have to do with the sale of coke are able to put their whole-hearted energy into the developing of the business, the business will not be properly brought forward, and one employee of a gas company can do more harm to the sale of coke by his indifference to the use of coke than can be overcome by half a dozen solicitors. As an example, suppose a resident who had in mind trying coke for household heating speaks to a gas company employee and asks him what he thinks of coke as a fuel and gets a reply, "I know nothing about it," "I don't use it," or "I don't like it," the harm and injury done cannot be estimated. The seeker after information would devote considerable time to telling the story whenever coke was mentioned. I know of a gas company whose officials have lain awake nights trying to plan some way to get rid of their coke pile and when the matter was looked into carefully it was found that none of the officials were using coke exclusively in their homes and but few of the employees.

Your Employees as Users

After you have had your employees and officials brought to the proper realization of coke value as to house heating, you will have quite a bit of trade and in addition a number of boosters and salesmen for coke. To get the householder to use coke, newspaper advertising and circulars have their place, but as in the sale of everything personal solicitation brings the best results. What we would suggest doing would be to have the instructions carefully prepared, on the proper way of burning coke; make the instructions as simple as possible and do not confuse the prospect with lengthy statements explaining how to use coke and how to operate the dampers. When instructions and information along these lines are prepared and ready for distribution, have a solicitor or a number of them start out, going from house to house, explaining and telling about coke. Try to get the prospect to use one ton or fifty-bushel load; don't try for anything below, for the reason that a smaller amount would not give sufficient fuel for the test and we have found this plan works the best. We have made more permanent customers of those whose first purchase was fifty bushels or more than we have with those who bought ten or twenty bushels the first time. These customers must be handled with gloves and every possible attention and courtesy shown them. If they have a phone, call them the day after the coke is delivered and if necessary go see them and follow closely until repeat orders come in; keep their names on file and check occasionally to see that they continue as users.

In the dull season use their names to make sales at a low figure. We found last summer our sales greatly increased by a special offer on 100-bushel lots (about two tons) for immediate delivery. This did not only increase sales at that time, but since then we have hardly missed a day but what we would have one or more orders for 100, 150 or 200 bushels going to one customer. This was extremely gratifying. In the past the orders would be for only fifty bushels or less.

We have found the best way to handle a prospect was as follows: The prospect asks first, usually, what is the difference between coke and coal? We tell him there is very little difference. This can be said truthfully. Then qualify your remark by explaining just what the difference is. Coke is used identically the same as anthracite coal with small difference in regulation of draft, less kindlings and not much more difference than would be experienced between a slow burning and a free burning anthracite. Then do not frighten the customer away by telling him that coke will not burn out his grate or his furnace and in the next breath advise him to use two inches of ashes on the grate bars. Say nothing about the coke burning out the furnace. There have been as many furnaces burned out with coal as have ever been with coke and there has been as much iron melted in cupolas with hard coal as there has been with coke. It it well enough to advise the prospect to shake furnace but once a day and leave some ashes on the grate bars in order to help check the draft and keep the ash pit clean, but stop there. The point I wish to make is, do not confuse the prospective customer with a lot of explanations and printed matter, particularly cuts, showing the regulating and changing of drafts. Every furnace differs from another just as much as people do and every man running a furnace has his own ideas and little "kinks" as to how his furnace should be run and these are as sacred to him as his pet hobby, so why have these upset; it will only take a few minutes burning coke for a man to understand what should be done and the second time he will be able to carry his fire without much trouble. If there is any particular reason why he doesn't have success, the gas company should be prepared to show him where he has made an error and in order to do this every prospect should be followed up after his purchase until he has made the second purchase and is completely satisfied.

An article by Donald B. Prentice, M.E., instructor in mechanical engineering, Yale University, in the *Heating and Ventilating Magazine*, May, 1917, describes at length tests made with coke and hard coal at the Mason Laboratory, Yale University. In the article Mr. Prentice says, "From a financial standpoint heating with coke is about 20 per cent less expensive than with stove anthracite, and corresponds closely to the cost with pea anthracite. This latter fuel cannot be burned in many residence boilers, however, on account of insufficient draft. At the present prices, $7.75 for fifty bushels of

coke (47.48 pounds per bushel) and $9.75 a ton of stove anthracite, the costs of fuel for serving 1,000 sq. ft. of radiation one hour would be 10.45 cents and 14.5 cents respectively. Which increases the relative saving of coke."

The test showed that coke could be used with a 20 per cent saving in cost of fuel with the two fuels at the prices as above stated. In summarizing would say, that the proper place to sell coke is in the home market where it can be delivered by automobile trucks or teams by the gas company themselves, and all householders should be educated to the point of using coke.

The Dollars and Sense of It

What Good Public Relations Mean

By JOSEPH B. GROCE

I am a newcomer to the public utility business and know little about the public utilities—save as a layman. Perhaps in the kind of work I am doing this is an advantage, for I can better judge what you are trying to "put over," in a legitimate sense of that word, not *on* the public but *to* the public.

I believe I do know something about industrial relations, public relations, or, better still, human relationship in business.

Let me illustrate what I mean by "human relationship" with one or two stories.

When the present Erie Canal was being built Secretary of State Hughes was Governor of New York. He found, on looking over the plans of the canal, that adequate arrangements had been made to take care of the mules that towed the canal boats, but there were no rest-places for the human beings who ran these boats.

A certain business I know had a man in its employ for over ten years doing laborer's work and driving a tip-cart. Someone asked the old fellow one day how he liked the company he was working for, and how they treated him. His reply was: "I was sick the other day, and so was the horse They sent for a veterinary surgeon for the horse, but they sent me home and docked my pay for the time I was out."

Old Commodore Vanderbilt was the fellow who said years ago, "The public be damned," but the New York Central Railroad to-day is one of the leaders in public advertising for the good-will of this same public.

You will agree with me, I think, that times are changing. The American people have always been an independent thinking people, and since the great war they are more so. Some of you men were over across during the war. Since you have come back home you are different fellows. The small and petty things of life do not interest you. It's the big, frank, open, face-to-face and eye-to-eye things that really count. Cards on the table, face up, a spade a spade—that's the way you want people to treat you; that's the way you want to live.

That's the spirit that has been developing in the industrial world, slowly but surely, for some years now. Capital and labor—employer and employee—man and management. How are they best getting on? By laying their cards on the table and talking over their common problems, man to man, in the open.

In my judgment, this development, this human relationship problem, is the most important factor in the industrial development of America to-day. And the big industries that are meeting this problem in the open are the industries that are most successful.

You and I represent a big industry—the public service industry. It is one of the biggest in this country. This industry, as an industry, has many problems, but it has two problems bigger than any other.

The first—human relationship with its employees—it is handling better than most other industries. After considerable study of this problem, not only in New England but throughout the Middle West, I am convinced that the telephone companies, the electric light companies and the gas companies are doing more to help their men and women help themselves; have always had a greater regard for their old, faithful employees than any other industry I know.

The Problem of Public Relations

But the other big problem—human relationship between the public utilities and the public, or the problem of public relations—I regret to say, I think you have handled badly. Perhaps it would be better to say you have not, up to recently, been handling it at all.

You are gasmen and have been making gas and selling gas. How much real effort to get the goodwill of the public whom you serve has your company made in the past ten years? Your companies have been attacked on every side by blatant politicians and scurrilous newspapers, and yet they have remained silent You've been called rascals and thieves by ignorant and unthinking people whenever you've asked for higher rates, and yet little has been done to stop this hue and cry.

Mind you, some of it never can be stopped. But I think you agreed with me when I said, a little while ago, that the American people have always been independent thinking people, and I hope you will go further with me and agree that, on the whole, they are a fair-minded people. Leading representatives of the public utilities of New England have come to this conclusion, and in order to help educate these fair-minded people to a better understanding of their public utilities—for, after all is said and done, they are theirs—have established the New England Bureau of Public Service Information.

But the work we of the bureau are trying to do is only a small part in the solution of the problem. But you, in your personal contact with customers, figuratively; in your daily travels from home to home, can supplement this work of ours and make it the beginning of better times for the public utility industry.

Isn't it true that every one of you is the company when you are talking to a customer? The attitude

of the company toward the public is gauged by your personal attitude toward the customer. This may seem a small matter, but it was not so many years ago when the head of the concern used to personally see every customer.

It isn't so much *news* as *truth* that we need to tell the public about our industry. Let's tell the individual that a good proportion of his savings are invested in public utility securities, and when he knocks the public utilities he is hitting his own pocketbook. Let's tell him that his city, his town, his hamlet, his home, would be a pretty poor place to live in without the telephone, light, power, gas, heat and transportation by electric cars to and from his work. It's the truth —then why not tell him these things? Let's ask him how he liked candles and lanterns recently after the ice storm, and then follow that up by asking him where he expects the money to come from to repair the millions of dollars' worth of damage done to the public utilities by that storm. Let's help establish a human relationship between our industry and the public, so that gradually there will develop in the public mind a realization that these public utilities, this wonderful industry, are something to be proud of, and not something to sneer at.

The American public should be made to realize that the public utility industry of this great country of ours is one of the finest things we have. It has done more than any other industry to make us rich in material wealth and happy and contented in our home life.

Why not, then, talk about these things? And talk earnestly and honestly. We've admitted, haven't we, that the American public is independent thinking and fair-minded? Then, gradually these truths are going to sink into the mind of the public, and its attitude is eventually going to change.

The other day John B. Bogert died—one of the most noted newspaper editors this country has ever had; for seventeen years on the New York *Sun* with Charles A. Dana. Bogert was the originator of that oft-quoted remark, "When a dog bites a man, that is not news. It happens so often. But when a man bites a dog, that is news."

This, for years, has been the attitude of most of the newspapers in regard to the public utilities. When a gas plant blew up, or people were asphyxiated by gas, that was news, and they printed only that kind of stories about us. But the newspapers to-day, with a fixed public policy, are realizing that the public service companies are run by red-blooded human beings, with brains and with vision, and are seeing that the prosperity of the whole country is more dependent upon the fostering of our public utilities than upon any other single factor.

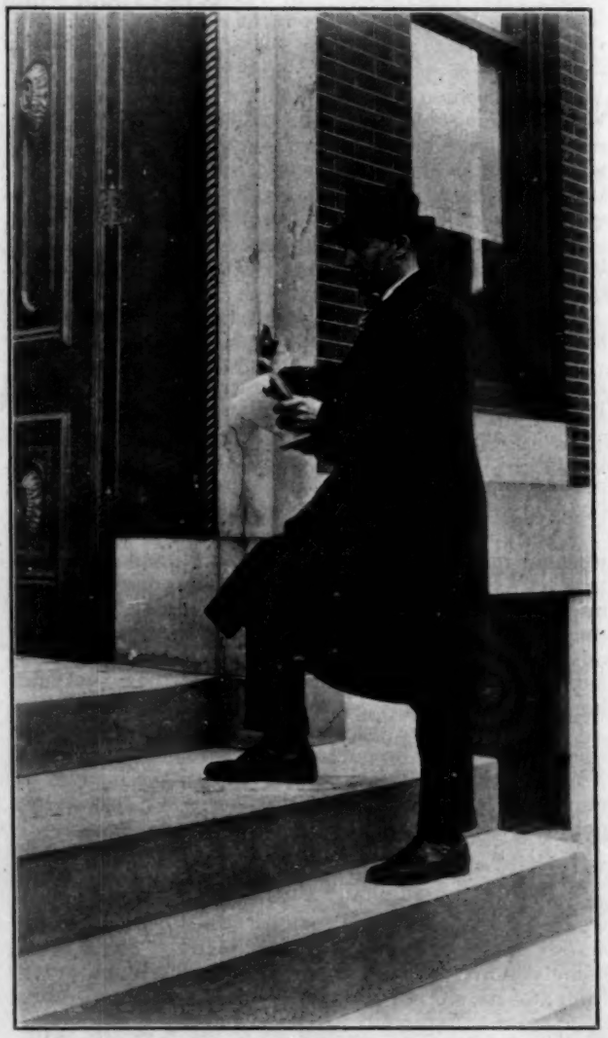
Quick Action of Meter Reader Saved Customer's Life

The presence of mind of Norman H. Simms, meter reader of the Consolidated Gas, Electric Light & Power Company, of Baltimore, Md., save the life of one of the company's customers.

Mr. Simms, by his quick action, showed himself a man that could be depended upon in a crisis and the following letter of appreciation from the meter readers' department shows the company's recognition of Mr. Simms' service.

Norman H. Simms, Meter Readers' Department.

I want to commend you for the good work you did yesterday at the home of Frank W. Bowersock, 4802 Delaware Avenue, where you called in pursuance of your duty to make a reading of the gas meter and found an improvised defective water heater which was causing a dangerous condition and had already resulted in the death of one person and the serious illness of two others. The quickness with which you located the source of the trouble and the effective



steps you took at once to remove the cause and to summon assistance indicate presence of mind and quickness of decision in a crisis.

I have instructed the employment department to file a copy of this letter with your service record; also to restore your record, which was broken on March 27, 1920, so that it will show continuous employment from the time that you first entered the employ of the company on May 4, 1916, to the present time and further to adjust your salary to the maximum regular rate of pay of meter readers.

I trust that the future will give an opportunity of making further recognition of your splendid service.

(Signed) CHARLES M. COHN, Vice-President.

As the Journal Views It

Winning Public Good-Will

The annual convention of the New England Association of Gas Engineers, which was held during the past week in Boston, had as its keynote the discussion of public relations, and the ideas that were developed during the various talks showed how deeply interested the members were in this vital subject. The AMERICAN GAS JOURNAL has long been an advocate of the establishment of a department devoted to creating public good-will and understanding of our problems and has also gone on record as favoring certain lines along which this work should be carried. The New England utilities have established under the direction of an experienced newspaperman a bureau that has already created a place for itself by the constructive work it has been doing.

But this work is spreading to all parts of the country and should within a short time blanket the entire United States so that there will be no excuse for a lack of knowledge by the public of conditions in the gas industry.

The New England bureau states clearly that it is not so much a matter of news regarding the industry as it is the spreading of truth that counts. We agree that the spreading of truth is all important, but we are of the opinion also that the truth must have some timely interest if it is to get its message home. Many of the most important facts of this world are not a matter of general knowledge simply because they never have been presented to the public in the light of having news value. It is this news angle that carries a fact across the editor's desk and which is the deciding factor in publishing a story. If it lacks this news feature then the chances are ten to one that it will not reach the light of day via a newspaper.

To our way of thinking, all of the truth regarding the gas industry will prove our most powerful weapon in breaking down any distrust that we are confronted with and this truth can be given a news value that will insure the spreading of the messags by means of the newspaper. Editors we have found are very choice of their columns and of the matter that they publish and if they can be assured that everything that is given out by a company has some value then they are bound to publish it.

We have found in carrying on this work that one of the most important features is the education of those who are responsible for the editorial opinions of newspapers. Here is where the newspaper goes on record, and if the editor can be convinced that the gas company is really striving to render service and to play fair with the public, then that attitude is bound to be reflected in his comments. Nothing is more important than reaching the public by means of the truth but by all means make the truth real news. You will find that your message will go much further and accomplish greater results.

A. G. A. Work Progressing

Reports emanating from the American Gas Association indicate that the work of the various sections is proceeding along splendidly constructive lines and the recommendations that will come as a result of the studies now being made will be helpful to operators. The program for the work of this year was very broad in scope and pretentious in character but the committees which have charge of the activities have proved capable in every particular.

In this connection it might be timely to point out that this year holds great possibilities of development and for the gas industry generally to achieve the desired results nothing is more important than membership in the national association. We have frequently pointed out all of the advantages to be gained by companies and individuals from an alliance with the American Gas Association but we feel that until the industry is 100 per cent strong in membership that the work will not have been accomplished.

It is to be hoped that the American Gas Association will grow rapidly during the coming months.

The Men Who Make the Gas for Baltimore

The men in the accompanying group picture are responsible for the operation of the gas manufacturing plant of the Baltimore Consolidated Gas, Electric Light & Power Company, at Spring Gardens. In looking after the various subdepartments of the plant, which employs between 300 and 350 men, the work is divided up so that a department head is made responsible for all the work done in his branch. Following is a list of these men with brief descriptions of the work under their supervision:

J. H. Wolfe, Superintendent of Spring Gardens Station—Mr. Wolfe is in general charge of the Spring Gardens manufacturing plant and is responsible for its continuous operation. This includes the manufacture of the gas necessary to meet the demands of our customers; to see that it meets with the requirements as to heating value and purity; and to see that the gas is distributed from the plant at all times under proper pressure regulation. The heads of the subdepartments all report to the superintendent.

F. J. Ikena, Superintendent of Gas Manufacture—Mr. Ikena is in charge of the actual manufacture of the gas. He sees that a sufficient number of carbureted water gas machines are operated daily to make the required amount of gas, having regard for the fluctuations in output, and the varying amount of coke oven gas received This includes the keeping together and training of an organization of sufficient size, looking after the maintenance of the machines so that they are in good operating condition; seeing that sufficient coke and oil is always available, and also directing the operators so as to maintain high manufacturing efficiency. In addition to these duties he has supervision of the cooling of the gas and the care of the works drips. He also sees that the gas from the machines is sufficiently high in heating quality to bring the mixed gas going to the city to the required standard of heating value.

W. B. Carter, Station Inspector—Mr. Carter is in charge of the steam generating plant. He sees that the boilers, engines, and auxiliaries are kept in good repair, and that sufficient fuel is available. He follows up efficiencies so as to keep the consumption of coal to a minimum. This requires constant watchfulness. He also has supervision of all steam mains to the various subdepartments.

J. F. Cassell, Station Inspector—Mr. Cassell is responsible for seeing that the gas after being made is properly purified before its discharge into the storage holders. This involves a continuous and careful scrutiny of the constant tests made at the tar extractors and at the purifier boxes. He also inspects the charts showing the temperatures and pressures on the various pieces of apparatus through which the gas passes in the course of its production.

C. O. Schobel, Station Inspector—Mr. Schobel is responsible for the operation and accuracy of the station meters by means of which all gas is measured. He also has charge of the manipulation and treatment of the water gas tar made. This tar is a by-product of their process of manufacture, and it is necessary to see that its quality meets requirements for making it salable. Another very important part of his work is the supervision over the valve house, through which all gas going to the city passes under adequate and proper regulation of pressure.

M. C. K. Jones, Chief Chemist—Mr. Jones is in direct charge of all chemical work. This covers the testing of the gas for quality each hour of the twenty-four and for the 365 days in the year. All material purchased, such as coal, coke, oxide, as well as the tar sold, are tested regularly to see that the required quality is maintained. Other routine tests are made which give an indication of the efficiency of operation of the various processes throughout the plant.

August J. Loeser, Construction Engineer—Mr. Loeser is in charge of the designing and drafting department and sees to the laying out and supervision of all new construction work, as well as preparing estimates on that work. This work embraces all branches of gas manufacturing equipment and gas storage.

F. E. Rasmers, Assistant Construction Engineer—Mr Rasmers is responsible for the carrying out of all construction work. He also assists in planning such work and superintends its erection.

L. C. Langkam, Chief Clerk—Mr. Langkam is head of the clerical force at Spring Gardens. In the operation of the plant complete records are kept of the various operations, the amounts of gas made, purchased and sent out to the city. The amounts of coal, coke, oil and other materials received and used daily are figured so that the department heads are continually advised as to the efficiency with which their respective departments are operating.

Front row, left to right—C. O. Schobel, F. J. Ikena, J. H. Wolfe, J. F. Cassell, A. J. Loeser
Rear row, left to right—W. B. Carter, F. E. Rasmers, M. C. K. Jones, L. C. Langkam

Developments in Gas Technology

Important Information Gathered from All Parts of the World

By ISMAR GINSBERG, B.Sc., Chem. Eng., Associate Editor

Vertical Gas Producer for Gas and Oil

In Austrian Patent No. 83,996, the Tinogen Products Company, Ltd., has described an apparatus for the production of both gas and oil from solid fuel. The distillation and the combustion of the fuel takes place in two stages, one following right after the other. In this process a part of the gas from the second or gas production stage is mixed with steam, which is made by the aid of the hot generator gas. The temperature of the latter is lowered in this way and heat is conserved. The mixture of gas and steam, which has a temperature of 450 to 650 deg. Cent., is permitted to act on the fuel in the initial stage of the process. The gases and vapors that are produced thereby are removed separately from the generator gas and cooled and washed to recover therefrom various volatile products. The apparatus itself is built vertically. Fuel enters at the top and air and steam at the bottom.

Desulphurizing Gases

The Badische Anilin und Soda Fabrik has patented a process of removing sulphur from gases by the aid of activated charcoal (see British Patent No. 170,152). The gas is first passed through a suitable washing apparatus in which it is treated with a washing liquid, such as a strong solution of sulphuric acid, or else this washing vessel may contain a quantity of the active charcoal. The preliminary treatment is for the purpose of removing certain tarry constituents which would otherwise interfere with the removal of the sulphur compounds later on. After leaving the purification apparatus, the gas is passed into a second or reaction vessel where it is treated in the presence of air with active charcoal. The oxygen reacts with the sulphureted hydrogen with the deposition of sulphur on the charcoal. When the latter will not absorb any more sulphur, the sulphur is removed by extraction with a solvent and then the charcoal can be used again. When the purification process is effected with the aid of an acid, it is advisable to add a little ammonia or ammonium carbonate to the gas before it enters the reaction chamber or to the catalytic mass in it.

Drying Oil from Generator Tar

The oils that are obtained from the distillation of generator tar or from the tar recovered from the destructive distillation of high volatile lignite coals may be treated with a small quantity of nitric acid at ordinary temperatures and then heated to 100 deg. Cent. for a short time. A nitrated product is produced in this manner, which possesses drying properties, analogous to those of the fatty drying oils, linseed oil, soya bean oil, etc. This product may be used in admixture with the regular drying oils in the manufacture of paints and varnishes, or else it may be employed alone. It gives a hard glossy coat on drying in air. This film is elastic, not sticky and can be given a very high polish. The nitrated oil is recommended especially for use in making floor paints. It mixes well with all sorts of pigments. (German Patent No. 345,855.)

Coke and Illuminating Gas from Anthracite

The apparatus which is used for this purpose and which is covered by German Patent No. 331,508 consists of three shaft furnaces, arranged alongside each other. The two outer furnaces are filled with coke or coal, while the one in the middle is filled with anthracite. The two furnaces at the sides, which are set in an inclined position, are built with their lower ends connected to the middle shaft furnace, and are so constructed that they discharge into the shaft furnace, one at the lower end and the other at the upper end. The required heating gases are produced in the two side furnaces. The hot gas of one side furnace is driven into the hot coal of the other side furnace. The direction of the passage of the gases can be changed by the aid of a damper in such manner that the described process can be made to take place in the opposite direction. The distillation is a continuous process and the excess of gas formed can be conducted to the proper point. Heat regenerators may be employed which absorb the heat in the gases coming from the furnaces and by changing the direction of the gas, this heat is given up again to the gases flowing back into the furnace.

Sulphate of Ammonia

The draining of the ammonium sulphate crystals, as they come from the saturators, is accomplished in a removable bucket, which has a perforated bottom and which fits into a suction chamber. There are various ways in which this idea may be carried out. The crystals are washed with water, and if a neutral sulphate is desired, they are also treated with a little ammonia. Full description of process and apparatus is given in British Patent No. 172,337.

Continuous Operation of Benzol Refining Plant

In the German gas journal, *Das Gas und Wasserfach*, 1921, page 185, there is given an account of the operation of the benzol refining plant in the Stuttgart gas works This plant is characterized mainly by the fact that its operation is continuous in contradistinction to the ordinary discontinuous type of benzol refining installations. The necessity for refining benzol is discussed, particularly from the motor fuel standpoint. The apparatus used in this continuous refining process is small in volume. It consists of small cylindrical vessels, filled with Raschig rings or other packing which are not affected by the reagents used in the process. Four such vessels are required. The benzol enters at the bottom and flows upward through the packing, meeting a down-flowing counter-current stream of the reagent. The first machine is irrigated with caustic soda solution which removes traces of phenol from the benzol. Then, the benzol is washed with water in the second machine. In the third apparatus it is treated with sulphuric acid, which removes the pyridine bases and in the fourth vessel it is treated once again with water. The article goes into considerable detail, describing the

construction and operation of the apparatus. It also gives various data gathered from actual practice on the effectiveness of the process in removing the objectionable impurities from the benzol. The economy effected by the process is also told in considerable detail in figures which indicate the experience of the Stuttgart gas works with this installation.

Temperature Distribution in Gas Generator

A study was made of the operation of a lignite coal gas generator, with a shaft diameter of 260 cm., water-jacketed and provided with a Kerpely rotating grate, in order to determine the distribution of the heat throughout the apparatus during a charge. The normal charge was 2,400 kilograms of coal in twenty-four hours with the addition of 10 per cent steam under the grate, figured on the weight of the coal. Five different thermocouples were arranged at different heights in the generator. The lowest temperatures, 130 to 190 deg. Cent., were measured 20 cm. above the layer of coal. Consequently, it is evident that the temperature in the lignite generator is too low for the production of coal tar in distillation retorts. For further details the reader is referred to the *Ingenieur Zeitung*, 1921, 283.

Determination of Sulphur in Gas Purifying Mass

In the German journal, *Zellstoffe und Papier*, there is described a method of determining the sulphur in the gas purifying mass. About ten grams of this mass is mixed with about one gram of blood charcoal and half a gram of potassium carbonate and placed in a tube which may be closed readily with a wad of absorbent cotton. The tubes are made is such a manner that they can be suspended in the extraction vessel, in which the extraction bulbs are filled with carbon disulphide to 2/5 of their height. The extraction takes place in the regular manner the solvent is distilled off and the residue weighed. The tarry impurities are removed by the addition of the blood charcoal and the potassium carbonate so effectively that they do not form more than 0.25 per cent of the weight of the sulphur extract.

Gas Production in Moving Retorts

The Aktiensgesellschaft fuer Brennstoffvergasung, of Berlin, has secured a patent (see German Patent No. 338,192) on a novel apparatus used for the manufacture of gas. The apparatus consists of one or more retorts which extend downward in a gas producer. These retorts are given a circular motion during the gasification process, so that uniform heating of the apparatus is obtained. A water seal traps the produced gas.

Dust Content of Gas

In German Patent No. 337,963 there is described a very interesting photo-electric method of determining the dust content in gas. The apparatus consists of an ordinary Bunsen burner which is connected to the gas supply, it is intended to test. The gas is ignited and burns in the burner. The flame is enclosed with a metal casing, so that the light from the same is directed in one direction only; that is, through an opening in the side of the casing, to which there is connected a short flue, in which there is provided an arrangement for holding a lens. The purpose of the lens is to collect all the light rays from the flame of gas and focus them on a selenium cell. This cell is inserted in an electric circuit, in which there is also a storage battery and an electrical measuring instrument. The light falling on the selenium cell generates a current which is read off on the measuring instrument. The stronger the light, the greater the current. The intensity of the light depends on the color of the flame which is in turn dependent on the dust content of the gas. In this way after suitable calibration of the apparatus the gas can be examined.

Dry Magnetic Separation of Coal and Coke from Ashes

The *Zeitschrift fuer Dampfkessel und Maschinenbetrieb*, 44, 265, describes the dry magnetic process of separating coal and coke from ashes, which is used in the Krupp-Gruson works in Madgeburg, Germany.

The Selling of Coke

(*Continued from page* 161.)

units interspersed with electric units adds to the safety of the entire lighting plant, as it provides for partial alternative illumination if one or the other system fails."

The municipal plant was installed, consisting of specially designed standards and lamps, terminal poles and transmission lines, all under the direction and operation of a bureau of the Department of Public Works, and, in addition, 1,500 standard units equipped for gas, operated and maintained by the street lighting company.

While the explicit recommendation of the committee of the engineering society—that a relatively large number of gas units should be installed and properly distributed—was not carried out, the gas service is fully equal to that of the more evenly distributed electric units of equivalent illuminating power.

Furthermore, they have demonstrated just what was anticipated in the minds of the committee, namely: that through their use there could not be complete failure of the lighting system.

Incandescent Mantle Gas Lamps—Washington, D. C

In the city of Washington, D. C., there are more civic associations than in any other city of equal size. This is probably due to the natural desire of citizens to discuss civic affairs, and especally in this city, where they have no vote in municipal affairs.

The municipal government of Washington is directed by three commissioners, who receive their appointment directly from the President of the United States, and under them are the directing departments and bureaus for carrying out municipal work with the appropriations made for the purpose by Congress.

The city has always had both gas and electric street lighting, but in recent years there has been a general tendency of the authorities to bring about a unified system of electric lighting.

Owing to the fact that practically all of Washington streets are thickly lined with trees, the use of high candle-power units, widely spaced, is impracticable, consequently the prevailing method is to have large numbers of the lower candle-power illuminants, mounted not more than 10 or 12 ft. above street surface throughout the residential portions of the city. Considerable progress has been made in beautifying

the streets by making the lighting standards attractive in appearance, and so far as the available appropriations permit this idea is put into practice.

Where the diffusive glass globes are used on both the gas and electric units the average person does not know the difference, but in those sections where the new units have not been placed the familiar type of upright mantle gas lamp is easily distinguished. Probably because of the difference in appearance and the effect of electric propaganda, the civic associations took up the question of street lighting rather strenuously during the early part of 1921, and through resolutions adopted by them the commissioners of the District were petitioned to displace all gas street lamps with the electric lamps as rapidly as possible

The agitation along this line became almost chronic and as a consequence an appropriation of $50,000 was asked of Congress to defray the expense of more rapid installation of electric street units. This appropriation was, however, denied on the grounds that all District expenditures be reduced to a minimum.

There are about 10,000 gas street lamps in Washington so interspersed with the electric lamps that the streets generally are not left n darkness at such times when electric service is suspended because of circuit troubles. This feature, while known, was not fully appreciated either by the citizens or by the authorities in charge.

In order to save gas, and at the same time to make the lighting of the streets of our capital safe, it was necessary for the service company to take up the matter directly with the commissioners, setting forth, first of all, the fact that street lighting is essentially a police measure and that any reduction in the efficiency of lighting as such was against the best interests of the community served. This point was stressed particularly because of an occurrence in a neighboring city, where, on a Saturday night a few weeks previous, practically all electric circuits were extinguished for hours and the only lighting protection afforded was on streets that were gas-lighted.

The importance of this feature and the practical service value of gas was conceded, but the question was raised as to the adequacy of the illumination produced by gas lamps in comparison to that which could be obtained from the larger sizes of the electric lamps. This question was settled in the only convincing way: that is, by a demonstration on one of the principal thoroughfares. Double inverted mantle lamps, enclosed in clear glass lanterns which were made to correspond with the design of the posts, were substituted for the large diffusive globe type of lantern, enclosing single upright mantle lamps.

When the demonstration was ready the officials of all the civic associations were notified and invited to be present on the night of the first lighting. At the same time a full-page notice was inserted in the Washington papers calling the attention of the general public to what was being done. The striking feature of this notice was the truth of its statement, which was as follows:

If from the Point of PUBLIC SAFETY Alone
The DUAL SYSTEM of LIGHTING Is Considered
BEST for Baltimore and Pittsburgh
How Much More Important in THIS—
THE NATION'S CAPITAL

This notice included also a written statement made by the Superintendent of Lighting of the City of Baltimore, in which appeared the following:

"Not only does the dual gas and electric system give best results from the standpoint of public safety, in continuity of service and adequacy of illumination, but it enables extensions to be made more economically than is the case where only one type of illuminant is obtainable.

"Where increased illumination is required, instead of changing to electricity, as was formerly done, higher powered gas lamps are now considered, so that the established system is retained as far as possible."

In the statement of the Director of Public Works of Pittsburgh was the following:

". . . I believe that a dual system of lighting is for the best interests of the city, as it provides competition between the two systems, which naturally results in a benefit to the city. As a police measure it is a guarantee that the entire city will never be in total darkness, which is a decided help as a preventive of crime."

The influence of the demonstration and the public notice to the associations and newspapers was remarkably satisfactory in producing a better understanding; and further, which is of much practical importance, in less than one month after the demonstration was made the electrical engineer of the District of Columbia in charge of street lighting wrote his opinion as follows:

". . . I unhesitatingly assure you that, in my opinion, a 'dual system' of street lighting in the District of Columbia is in the public interest."

The final result is that gas will not be unjustly discriminated against when extensions to the street lighting system of the city are made.

The Safety Factor

The "safety factor" of gas in street lighting cannot be overemphasized. Events of recent occurrence show the importance of having streets safely lighted. Tampa, Fla., was swept by a flood in October. Large sections of the city were under water for several days, business was at a standstill, and at night the terror of utter darkness was upon the people. Just previous to this happening an agitation was on foot to "modernize" the street lighting system, but before the flood came the people had voted not to cancel the gas street lighting contract. The Mayor of Tampa, in a message addressed to his fellow citizens the day after the hurricane passed, said:

"I want to say I am glad the gas contract was not canceled, for when the electric lights failed the gas lighted the streets so people could find their way about and also proved useful to owners of property who had gas fixtures."

Charleston, S. C., Chattanooga, Tenn., and other cities have had similar experiences where the presence of gas made the streets safe and kept down crime which always arises under the cover of darkness.

Between the supply of gas and of electricity is this outstanding difference: the former is constant in service, primarily because it is stored for use when needed, whereas the latter is dependent on the continuous movement of generating machinery—cannot be stored and, furthermore, is susceptible to interruptions in transmission and the force of the elements.

Electric street lighting circuits are separate and distinct from the main trunk supply lines, conse-

quently special investment is required for street lighting business.

With gas, on the other hand, there is no separate distribution system; street lamps are directly connected to the regular mains, and therefore assist in working them toward capacity, and in doing so the added consumption does not increase but helps to reduce distribution costs. From an economic standpoint it is good business since increased financial returns are made possible on present investment and without duplication.

Considering the acknowledgments of the efficacy of gas in street lighting, and also the direct and indirect returns therefrom, it is unthinkable that gas can be eliminated or discarded without cheating the public of that security which it has the right to enjoy. It is just as unthinkable that the industry can afford to acquiesce in the loss of prestige and prosperity obtainable from good public service; but to prevent both losses there must be action, immediate and effective, to hald and to increase public confidence in our industry.

Committee Awards Prizes in Third Suggestion Contest

Awards Cover Many Activities of Equitable Gas Company

In a letter to employees of the Philadelphia Company, A. W. Thompson, president, commented upon the outcome of the third suggestion contest, which closed on Dec. 10, awards for which have been announced as follows:

"I have been informed by the committee on suggestions that, while the period ending Dec. 10 was shorter by about twenty days than either of the two previous periods, the number of suggestions received exceeded the other two periods and that the awards made were double the amount of one of the other periods.

I am glad to see this interest shown in the contest and in the business affairs of the company, and want to urge those who have not yet submitted a suggestion to write up their ideas and send them to the committee. As I said in one of the previous bulletins, some seemingly simple ideas have great value. And to those whose suggestions have not been awarded prizes, try again.

The first prize—$50—was awarded to M. J. Garrity, Equitable Gas Company, McKeesport, Pa. This suggestion provides that a service tee be used in place of a nipple and a plain tee for making service connections at the gas main. Also that a rubber stopper be placed in the top of the tee while running the service. The former will result in a saving to the company and the latter is to be used as a safety precaution.

"The second prize—$25—George M. Probst and Francis T. Crowe, of the Equitable Gas Company, Twenty-third Street and Liberty Avenue shops, submitted jointly the suggestion awarded the second prize. This suggestion revises the entire history card system of the gas companies, provides for additional information, and makes changes in the file box to make the cards more readily accessible.

"The third, or $15, prize was awarded to Norman F. Le Jeune, of the chemical laboratory of the Duquesne Light Company, Broad and Whitfield Streets. This suggestion is a plan for ventilating the laboratory which has been made necessary on account of the increase in the scope of the work and a resultant generation of a larger volume of fumes as well as an increase in personnel of the department.

"The fourth prize—$10. A suggestion calling attention to the misuse of interdepartment envelopes and recommending the issuance of instructions that every line of these envelopes be made use of was offered by A. J. Schuster, of the treasury department, and awarded the fourth prize.

Five-Dollar Prizes for Usable Suggestions

"Forty-four additional prizes of $5 each were awarded the following employees who submitted usable ideas:

"Howard A. Heslip, contracting department—That Dodge reports be used to secure leads for obtaining business for the Equitable Sales Company.

"Clarence R. Strothers, Equitable Gas Company, 6119 Penn Avenue—That gas meters be marked with a caution to keep fire away.

"Chris. H. Neiser, Brunots Island power plant—That a larger connection be taped into elbow of suction line on air washer pumps and run into sewer with valves between.

"John Ostermaier, Twenty-third Street shop—That gas service lines be cleaned of foreign corosive matter with the use of benzine, forced into the line at the connection in the cellar, wherever possible, instead of opening up the street.

"C. R. Strothers, Equitable Gas Company—That cast-iron stopcock with a brass core and brass seat be used in place of the all-brass cock on gas service line installation.

"Homer S. Synestevedt and C. R. Strothers, 6119 Penn Avenue—That a set of rules or specifications for house piping be compiled for the guidance of plumbers or gas fitters.

"Edward C. Dietz, switchboard operator, Phipps power station—That a speaking tube be installed between the engine room and boiler room of the Phipps power plant.

"John H. Linder, Allegheny Heating Company—That orders be issued to meter readers instructing them to put the lids down over the dial glasses of the meters. Also that stopcocks be substituted for globe valves on gas meters.

"Joseph McLuckie, Twenty-third Street shops—That, in view of the fact that we are advising the public to use coal for heating the houses, now is the time to start running smaller-size service lines and save money by using smaller fittings.

"Edward Dolan, accounting department—That reports of changes in gas meters be made in duplicate and a copy sent direct to the accounting department to avoid delay in rendering of consumers' bills.

"Many suggestions received cannot be adopted for various reasons but this does not mean that the employee has not been benefited by turning in the suggestion. The fact that an employee will make a suggestion, whether adopted or not, is entered to the credit of the employee on his or her record card.

"The contest for the first quarter of the year 1922 has commenced and will close March 31."

Public Utilities Securities Market Report

Prices of Representative Gas Bonds

(Quotations furnished by The National City Company)

Company	Issue	Maturity	Feb. 16, 1922 Bid	Asked
American Lt. & Trac. Co.	Five Year 6s	May 1, 1925	99½	100¼
Brooklyn Union Gas Co.	First Consol. 5s	May 1, 1945	88	90
Columbia Gas & Elec. Co.	First 5s	May 1, 1945	89¼	90¼
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore	First Ref. 7½s	Dec. 1, 1945	105	107
Consol. Gas, Elec. Lt. & Pr. Co.	General 4½s	Feb. 14, 1935	85¼	87
Consol. Gas Co. of New York	Sec. Conv. 7s	Feb. 1, 1925	103¼	103¾
New Amsterdam Gas Co.	First Consol. 5s	Jan. 1, 1948	72	75
Denver Gas & Elec. Co.	Gen. (now 1st) 5s	May 1, 1949	85	87½
Detroit City Gas Co.	Gold 5s	Jan. 1, 1923	96	98
Equitable Illum. Gas Lt. Co. of Philadelphia	First 5s	Jan. 1, 1928	95	98
Hudson County Gas Co.	First 5s	Nov. 1, 1949	86	88
Laclede Gas Light Co.	Ref. & Ext. 5s	Apr. 1, 1943	86	87
Louisville Gas & Elec. Co.	First & Ref. 7s	June 1, 1923	98½	100
Michigan Light Co.	First & Ref. 5s	Mar. 1, 1946	85	88
Milwaukee Gas Light Co.	First 4s	May 1, 1927	88½	90
Pacific Gas & Elec. Co.	Gen. & Ref. 5s	Jan. 1, 1942	87½	88
Pacific Gas & Elec. Co.	First & Ref. 7s	Dec. 1, 1940	104	105
Cal. Gas & Elec. Corp.	Unif. & Ref. 5s	Nov. 1, 1937	94	95
Peoples' Gas Lt. & Coke Co.	Refunding 5s	Sept. 1, 1947	86	86½
Chicago Gas Lt. & Coke Co.	First 5s	July 1, 1937	92	93
Portland Gas & Coke Co.	First & Ref. 5s	Jan. 1, 1940	87	89
Seattle Lighting Co.	Refunding 5s	Oct. 1, 1949	79	81
Southern California Gas Co.	First 6s	Nov. 1, 1950	94	98
Utica Gas & Electric Co.	Ref. & Ext. 5s	July 1, 1957	85	88
Washington Gas Light Co.	General 5s	Nov. 1, 1960	89	90
Western States Gas & Elec. Co. of California	First & Ref. 5s	June 1, 1941	85½	87

Gas Earnings

In the last ten months of last year the Consolidated Gas, Electric & Power Company, of Baltimore, had a surplus available for dividends, after depreciation, equivalent to $2,072,223 a year, according to figures made public by Spencer Trask & Co., who are underwriting the new issue of $1,800,000 of its cumulative preferred stock. The corporation's balance sheet at the end of the year, after giving effect to that new financing, gives those preferred shares a book value and equity of more than $454 each.

Bond Exchange Offered

Springfield, Ill.—The Union Railway, Gas & Electric Company has addressed a letter to holders of the Springfield Railway & Light Company 5 per cent collateral trust gold bonds, offering first mortgage bonds of the Illinois Power Company bearing date of Dec. 1, 1921, maturing June 1, 1933, and bearing interest at 5 per cent.

President Hardy of the Union Company explained, in making this offer, that the securities pledged as collateral for the Springfield bonds have been assigned to and are owned by his company, and asked that the exchange be made as soon as possible. The offer expires on Feb. 15.

Minneapolis Gas Company

According to the receivers of the Minneapolis Gas Light Company, the gross income in 1921 was $3,829,943; net earnings from operations $951,824, and net income $388,012. The condensed balance sheet as of Dec. 31 last shows stores, supplies, etc., of $466,351; accounts receivable, $230,298; cash, $237,156; notes payable $434,523; depreciation reserve $1,849,014; sinking fund reserve $1,303,450; accrued accounts, taxes, interest, etc., $880,858, and total assets and liabilities $11,252,369.

United Gas & Electric Corporation, for the twelve months ended Dec. 3, 1921, earned the equivalent of $8.28 a share on its $9,284,800 first preferred stock, without taking into account the large earnings accruing from its oil properties, which on Oct. 31 last showed a net, after charges and depreciation, amounting to $1,354,832.

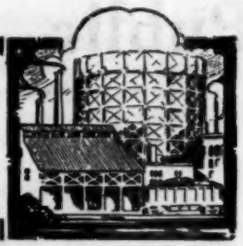
Public Utility Taxes Will Be Boosted Again in 1922

Madison, Wis.—Preliminary estimates of the Wisconsin Tax Commission indicate that the 1922 taxes on street railway, light, heat and power companies will be even greater than in 1921, when they were 15 per cent higher than in 1920.

The commission gives the probable rate for 1922 as $21.19 per thousand. The rate in 1921 was $21.06 a thousand.

Returns of taxes levied have now been received by the commission from 57 of the 71 counties and the city of Milwaukee. They show an increase of one-half of one per cent. This indicates, the commission says, that the total tax levy for 1921 is ont over $96,800,000. This, divided by the total State assessment of $4,570,698,530, would result in a tax rate of 0.02119, or $21.19 per thousand.

NEWS OF THE GAS INDUSTRY



"Public Relations" Keynote of Fifty-second Annual Meeting of New England Society of Gas Engineers

Excellent Attendance Makes for Most Successful Meeting

The fifty-second annual meeting of the New England Association of Gas Engineers was held at the Copley-Plaza Hotel, Boston, Feb. 15 and 16. It was one of the most successful meetings ever held by the association, both in point of attendance and the excellence of the papers read. The keynote of the meeting was the subject of "Public Relations."

The meeting was called to order by the president. Then followed the reading of the minutes of the last meeting, the reports of the various committees, and the election of new members.

President Smart then addressed the meeting. He said in part:

"Last year when you honored me with the presidency of this association we were celebrating in a quiet way our fifty-first anniversary. We had then completed a half century replete with good, conscientious work marked by a steady increase in membership and influence. The gas industry as a whole admits its indebtedness to our organization and has recently honored it by the choice of one of our prominent members as president of the American Gas Association. Of such an association as ours any man might feel as I do, that it is an honor to be its president.

"Since last February the clouds of doubt and uncertainty which then hung heavy over the industry have begun to lift, the sun is again shining, kindling in the gasman's heart hope, faith and confidence. Then various conditions as to labor, coal, oil and other materials and the cost of financing compelled the highest selling price for gas that had obtained in thirty-four years, resulting in dissatisfaction among customers and the loss of some. In the last year the cost of material and labor has begun to drop and water freights have declined nearly to pre-war rates, enabling many gas companies to reduce their selling price from 10 to 20 cents per thousand cubic feet, with still further reductions in sight.

"On Feb. 19, 1919, this association became affiliated with the American Gas Association, being the first of fifteen other gas associations to thus properly recognize that great body, which was born of a union of the old and venerable American Gas Institute and the National Gas Sales Association. Any one who attended the last convention of the A. G. A. in Chicago and nearly 1,500 did attend, could attest to the value of our close co-operation with that body.

"The general interest in gas is fostered and encouraged by the A. G. A. and its help and guidance is constantly felt by its members. I strongly recommend every member of the New England Association to become identified with the A. G. A., for in numbers there is strength. The high grade of papers submitted at the convention, and the instructive and constructive character of the criticism offered, were most interesting and beneficial to all who were there, and I urge the careful reading of the various papers submitted, as they appear in the various gas magazines. In them is much food for thought and incentive to action.

"I cannot refrain from referring to the sudden death of George W. Eccles, of Waltham, Mass. Mr. Eccles was with the New England party in its trip to the national convention in November, talked with all, and he seemed to be taking a much-needed rest. He was about the hotel lobby and at the various sectional and general meetings Tuesday, Wednesday and Thursday. We missed him Thursday night and Friday, Nov. 18, 1921, he passed away. His presence will be greatly missed at the future meetings of the association and of the guild.

"To quote in closing from a recent message of the American Gas Association, applying it to the New England Association:

" 'To-day, 5,000,000 persons in New England are dependent for their comfort, health, and even life itself, on gas. And we are charged with have chosen to devote ourselves to service. The well-being of those who thus trust us depends on the kind of service we give and to a large extent that service depends on what we take away from this, the fifty-second annual meeting of the New England Gas Association.' "

The first paper on the program was "Publicity—the Dollars and Sense of It," by Joseph B. Groce, of the New England Bureau of Public Service Information. This bureau is maintained by the public utilities of New England and its duties are to disseminate the truth about the various utilities and not so much news or propaganda. After the reading

of the paper the discussion was general and showed that the New England utilities have a well-organized bureau that is fast bringing about a better understanding on the part of the public of the various problems confronting the various utilities.

A. A. Higgins, of the Providence (R. I.) Gas Company, made the very strong point that "intelligent public opinion" in a community is the company's best asset, whereas misinformed public opinion is the com pany's source of greatest trouble."

Charles Otten, Jr., of the Plymouth Gas Company, is issuing a monthly bulletin called "Gas Service," and, while this bulletin was started only recently, he feels it will materially increase the good-will of their consumers because they are giving facts regarding the operation of the company, which will make them realize how much their comfort depends on the service given by the gas company.

H. Crafts, of the Pittsfield Gas Company, advocated the use of newspaper space in the local papers to tell the community of various problems the companies have to contend with and solve in order to give a high-class service.

C. E. Paige, Worcester Gas Light Company, went into the matter of "Employee Contact" with the public. He frequently issues a bulletin to all his employees advising them of the company's plans in all departments. This serves two useful purposes: First, if the employee is asked a question by a consumer he is in a position in most cases to give an intelligent answer, and in the second place it makes the employee feel that he or she is an important part of the organization.

H. J. Pettingill, of the Blackstone Valley Gas & Electric Company, Woonsocket, R. I., enlarged on this plan, and explained how in their company they held a weekly meeting of what he termed the "contact employees," consisting of the fitters, meter readers and collectors, sales people, cashiers, etc. These people are divided into groups and all matters of policy, etc., is explained to them so that they can intelligently answer questions asked them by consumers. They are also instructed that if a question is asked which they cannot answer correctly, to make a note of that question and bring it up at the next meeting, so that on the next call they can give the questioner the answer.

J P. Ingle, manager of Haverhill Gas Light Company explained that he had found the newspaper publishers in his town human, and they were very glad to publish real items of news about the gas company. He suggested that the gasman should not wait for a reporter to call but if he had an item of news to drop into the newspaper office with it.

Undoubtedly if the gas companies had been doing this kind of work for the past fifteen years, the results in "dollars" would have been enormous, and there is no doubt either about the "sense" of starting it right now.

Frederick C. Freeman, of the Providence Gas Company showd two miniature gas plants—one water gas and one coal gas—and made gas with each. Mr. Freeman explained that these miniature plants are used in talks to students in the colleges and schools, business men's associations, women's clubs and societies. In this way it is easy to visualize to the public how gas is manufactured and it gives the lecturer an opportunity to give many details regarding the operation of all departments of the plant, and has proved a splendid medium of public education. Mr. Freeman also stated that the Providence Gas Company also has a school for their employees, including office employees. Every detail of operation is carefully explained, and all go through the plant, watching the various processes. Also at various times various groups of consumers are taken through. This is all included in a campaign of educating the public to what gas really means to them individually and to the city.

After Mr. Ramsburg had read his paper on "Liquid Process of Gas Purification," lantern slides of various parts of the Seaboard plant were shown, and the operation explained. A great deal of interest was shown in the process and many questions were answered by Mr. Ramsburg.

Other very interesting papers read were "Coke Sales," by Joseph R. McKnight, of New Haven Gas Company"; "Liquid Purification," by C. J. Ramsburg, vice-president of the Koppers Company, Pittsburgh, Pa.; "Gas Street Lighting—Is It to Be Discarded?" by F. Victor Westermaier, Philadelphia, Pa., and "Industrial Uses of Gas," by Messrs. Berchtold, Joyce, Lafore and Clark, of Boston, Mass. All of these papers will be printed in the AMERICAN GAS JOURNAL.

The officers for the coming year are: President, V. E. Bird, manager, New London Gas & Electric Company, New London, Conn.; vice-presidents, C. E. Paige, manager, Worcester Gas Light Company, Worcester, Mass, and H. N. Cheney, engineer of construction, Boston Consolidated Gas Company, Boston, Mass.; secretary-treasurer, J. L. Tudbury, manager, Salem Gas Light Company, Salem, Mass..

New active members elected were Alex. H. Scott, superintendent, New Britain Gas Light Company; Albert J. Flanders, superintendent of distribution, Lowell Gas Light Company; John L. Ergenbrot, superintendent, Lowell Gas Light Company; Harold Eastman, assistant superintendent of manufacture, Connecticutt Power Company, New London, Conn.; F. L. Bell, manager, Fitchburg Gas & Electric Light Company; Frank R. Fowles, general manager, York County Power & Light Company, Biddeford, Me.; William A. Doering, auditor, Boston Consolidated Gas Company; W. A. Buttrick, vice-president, Twin State Gas & Electric Company, Boston, Mass.; R. M. McGillvery, manager, Twin State Gas & Electric Company, Dover, N. H.; William H. Richardson, manager, Twin State Gas & Electric Company, Brattleboro, Vt.; Leon C. White, manager, Twin State Gas & Electric Company, Bennington, Vt.; Alfred E. Shaffer, assistant auditor, Boston Consolidated Gas Company; Arthur H. Meyer, chief chemist, Providence Gas Company; Edward S. Sherman, new-business manager, Lowell Gas Light Company.

Associate members elected are George F. Wagner, treasurer, Lowell Gas Light Company; Jesse L. Johnson, purchasing agent, Providence Gas Company; A. C. Frey, Cadet engineer, Providence Gas Company; Allen E. Shippee, superintendent of manufacture, Pawtucket Gas Company; C. B. Hodgson, treasurer, Beverly Gas & Electric Company; Edward Rodger, foreman, Charlestown Gas & Electric Company; Charles W. Rainville, Jr., works superintendent, Salem Gas Light Company; George L. Gilfert, assistant to manager, Fall River Gas Works Company; Dr. Thomas Conroy, assistant sales manager, Wier Store Company, Taunton, Mass.; Raymond E. Shaw, district manager, B. F. Sturtevant Company; Andrew F. Pettingill, credit manager, Cambridge Gas Light Company.

A resolution was passed raising annual dues to $10 and introduction fee to $10.

Public as Utility Partners

The announcement that the Illinois Power Company, successor to the Springfield Consolidated Street Railway Company, and the Springfield Gas & Electric Company is to offer its stock and bonds to the local public is in line with the trend of the times.

Two other Illinois utilities are now offering, or will soon offer, their securities to the public they serve.

The Western United Corporation which serves Aurora, Elgin and other northern Illinois centers, and the Galesburg Railway, Heating & Lighting Companies, have announced the adoption of the customer-ownership plan. This idea has been tried out with success in many communities in the East. The best known and largest utility companies have approved it.

The Western United Corporation in its announcement of the plan says: "It has been called the most progressive service a utility company can render the residents of its territory." The Galesburg company, in its letters to customers, says, "We want you as a business partner. Up to the present time, practically all of our funds have been secured from outside investors and the local public has not had the opportunity to join in the development of what is essentially a home industry."

It is stated that in Illinois alone there are 500,000 residents who own securities in utility corporations.

Have You Joined the Natural Gas Conservation Movement?

This is the question asked Mr. Manufacturer and other large users of natural gas in the Pittsburgh district by the Natural Gas Conservation Company. They say:

"You can save from 10 per cent to 20 per cent on your gas bill and increase your production at the same time.

"We are so sure about this that we will make entirely at our own cost a trial installation of a Gasco governor so that our engineers can show you not only this big saving on your gas bill but also constant control.

"Constant control—no matter what the pressure is on the outside or inside lines—and easy control; that is, your furnace man can devote practically all his time to production. There is no furnace scrap to lay to the Gasco governor."

American Welding Society Proceedings

The American Welding Society, of 33 West Thirty-ninth Street, New York City, has issued the first number of its proceedings. Up to this time the official organ of the society was the *Welding Engineer* Each month a part of this journal was given over to the proceedings of the American Welding Society. This plan was not so successful as it made the proceeding available to non-members.

Most of the membership felt that like other societies they should have their own monthly proceedings published monthly and in convenient form. An attempt has been made to fulfill the requirement in this first issue. Copies of each issue will be mailed to each paid-up member.

Changes in Gas Company Officials

The electric lights at the Metropole Hotel in Denver seemed to have greater brilliancy than of yore. At the banquet table sat all the officials of the Denver Gas & Electric Company and, of course, the lights were only trying to act in kind to the brilliant coterie who on the evening of Jan. 23 assembled to bid farewell to T. O. Kennedy, who for several years has been general superintendent of the Denver Gas & Electric Company, and who by painstaking work has been selected to fill the chair of general manager of the Ohio Public Service Company, Cleveland.

Mr. Kennedy carries with him the well wishes of all, and his place in Denver will be taken by V. L. Board, a young man, member of the American Institute of Electrical Engineers, and a hustler.

New Gas Well

On Jan. 28, the Aztec Oil & Gas Syndicate brought in its second big gas well, the flow estimated at 8,000,000 cu. ft. a day, or about double that of their well No. 1, brought in two months previous.

The new well is located one-fourth of a mile from the older one and is within one mile of the city of Aztec, N. M.

Slays Three Mountain Lions

Redding, Cal.—Three mountain lions in three days is the record said to have been set by W. E. Wilson, assistant district superintendent of the Pacific Gas & Electric Company,. The big animals were brought down in the Squaw Creek mountains north of Winthrop. The three lions—two males and a female—were killed about five miles apart after Wilson's hounds took up the scent from the half-eaten carcass of a deer.

Wilson also got a close up snapshot of a sleeping bear that he came upon hibernating in a cave. The bear slept peacefully on.

The bounty of $85 on the three lions Wilson slew will reimburse him for the expense of his trip.

Commission Orders Cut in Gas Rates

Madison, Wis. — Gas rates charged by the Wisconsin Gas & Electric Company were cut from 10 to 15 cents a thousand cubic feet, in Racine, Kenosha, South Milwaukee and Cudahy in an order handed down by the State Railroad Commission Jan. 20.

This reduction is in addition to a cut of 10 cents per thousand made by the commission's order in Aug., 1921, and will reduce the company's revenue by more than $80,000 in the current year. Net rates in Racine for the first step of 1,000 cu. ft. were reduced by the order to-day from $1.55 to $1.45 per thousand. In Kenosha the first step dropped from $1.60 to $1.45. South Milwaukee and Cudahy rates were dropped from $1.65 to $1.55.

Baker Badly Burned in Gas Explosion

While attempting to light one of the large bake ovens in the bake shop of the Barker Baking Company, 423 Smithfield Street, Pittsburgh, Pa., John Stark, an employee of the baking company, was seriously burned on the face and arms following a gas explosion. The flames leaped out from the oven, setting fire to his clothing. The force of the explosion broke the large windows in the front of the bakery and caused considerable damage to the interior of the shop.

LAWRENCE GAS COMPANY, Lawrence, Mass., has declared regular semi-annual dividend of 3½ per cent to stock of record Jan. 15, payable Feb. 1.

Asks Receiver for Gas Co.

Topeka, Kan.—The State of Kansas, by Richard Hopkins, attorney general, has filed an action in the United States district court, asking that a receiver be appointed for the Citizens' Light, Heat & Power Company, of Lawrence.

The suit follows closely those filed in Federal court a few days ago by the State Utilities Commission and the city of Lawrence in which an injunction is asked to prevent the company from charging more than 80 cents for gas.

The price of gas in Lawrence has been the subject of a controversy for several months. The matter was before the industrial court in 1920 and later was taken up by the utilities commission and the district courts. The industrial court issued an order fixing the price of gas at 80 cents and a similar order was issued later by the utilities commission when it was charged that the company was making an additional "service charge" of 50 cents a month from each customer.

In the suits brought in Federal court by the Utilities Commission and the city, it is charged that the gas company continues to insist on the "service charge" and Hopkins, in his suit, states that $17,000 has been "illegally collected" in that manner. He alleges that the only way to force the company to submit to the rulings of the Utilities Commission is to have a receiver appointed who will be governed by the directions of the court.

Tips on Use of Gas

Milwaukee, Wis.—Most women do not get the maximum of good results from the use of gas appliances, according to an investigation made by gas engineers, manufacturers of household appliances and home economic specialists, the results of whose findings are announced by Henry Harmon, secretary of the Wisconsin Gas Association.

"The conclusions of these experts are based on actual tests made in a large number of kitchens during the progress of routine domestic work," said Mr. Harmon. Some of the suggestions of the investigators which will keep down gas bills and produce a maximum efficiency follow:

Keep gas burners clean by a monthly bath in hot water and soda.

See that burners are properly adjusted to give right proportion of air and gas. If your gas flame is long, yellow and smoky, the stove needs adjustment. You are using too much gas and getting too little heat. A small blue flame is the ideal one.

When about to use the gas oven, plan to use it to capacity. You can roast meat while making a pie or biscuits. There is plenty of heat to go around. Use the oven to capacity.

The same flame heats the broiler and oven. Both can be used at one time.

Get out of the habit of using the giant burner on your gas stove for everything. Smaller ones will do for half of your requirements.

Get acquainted with the simmer burner. It will keep boiling water at that temperature. It will furnish all the heat you need for a hundred purposes that you now require of the giant burner.

Don't try to use gas for heating until you have learned about what it will cost. The woman who warms up her kitchen in the morning by lighting the gas in her oven and leaving the door open is running up a healthy gas bill.

Preparing for Coal Strike

The Government is making preparations to do everything possible toward the prevention of a coal strike when the wage agreements expire in April. It is expected that the operators will try to bring wages down, while the miners will probably insist on the present scale, or possibly a higher one. The Government's efforts will be toward keeping up production during settlement of the dispute, and to getting the miners and operators together with the least possible ill-feeling. Considerable increase in movement of coal on the railroads is noticeable, many firms preparing for a shortage during the settlement by storing as much as possible while obtainable.

Boston Consolidated Gas Consumption

Boston Consolidated Gas Company reports consumption for Jan., 1922, as 657,360,000 cu. ft., an increase of 2.6 per cent compared with Jan., 1921.

Gas Company Has Annual Election

Poughkeepsie, N. Y.—T. R. Beal has been elected president of the Central Hudson Gas & Electric Corporation; John L. Wilkie, vice-president; Peter A. Burnes, secretary, and William Schickle, treasurer. Directors for the year 1922 are T. R. Beal, John L. Wilkie, E. E. Perkins, George A. Voorhees, Rolland A. Davidson, Frank N. Bain, Albert R. Beal, Hugh N. Buegler, Harris S. Reynolds and Stephen R. Bradley.

Directors of the Dutchess Light, Heat & Power Company, of Rhinebeck, elected for the coming year are: T. R. Beal, John L. Wilkie, Hugh Buegler, R. R. Rickert, Dr. R. Beal; officers: T. R. Beal, president; John L. Wilkie, vice-president; P. A. Burnes, secretary-treasurer.

Fuel & Gas Company Must Reduce Rates

Frankfort, Ky.—The State Railroad Commission has entered an order directing the United Fuel & Gas Company to reduce its rate 20 per cent. Citizens of Louisa and Catlettsburg complained to the commission that the fuel company was charging a 40 cent per thousand cubic feet rate in their cities as compared with a 25 per cent rate across the river in West Virginia.

The reduction ordered by the Railroad Commission will make the Ashland and Catlettsburg rate 32 cents per thousand cubic feet with the right to make a discount of 2 per cent if bills are paid within ten days.

Will It Be Wasted?

The reported discovery of a new natural-gas field in northern Louisiana reminds some that perhaps the fuel resources are not so limited as they have been estimated. If the reports, credited as coming from the United States Bureau of Mines are true the field holds about five trillion cubic feet of gas, the greatest natural gas source yet discovered. If properly used, such a volume of gas will be of great value to districts within its reach. Will those in charge profit by past experience in utilizing the fuel supply and abandon the wasteful methods of the past?

Complete New Water Gas Set for Binghamton Plant

The Gas Machinery Company, of Cleveland, Ohio, has been awarded contract by the Binghamton Gas Works, Binghamton, N. Y., for the installation of a complete new eleven-foot double superheater carbureted water gas apparatus.

The new water gas set will be installed in a new building adjoining the present nine-foot water gas apparatus which was built by the Gas Machinery Company, in Binghamton, several years ago and the new building will also provide space for a future duplicate machine.

The new water gas set will be equipped with overhead brick operating floor, gravity fuel charging arrangement for generator, steam meters, air meter, pyrometer, safety explosion blast check valve and will be hydraulically operated from one central location.

Provision will also be made so that an automatic water gas control can be easily installed at any future time by which the same levers that operate the hydraulic equipment by hand are timed and moved by mechanical power in a very simple and efficient manner.

The Gas Company has installed large piping to connect the new water gas set to the relief holder and are also installing additional auxiliary equipment of proper design and capacity to take care of the gas from the new eleven-foot set.

Gas Service Will Be Increased Soon

Asheville, N. C.—Housewives of Asheville will welcome the news that the gas service in the city will be increased to a large extent about March 1, through the installation of new gas benches at the plant of the Asheville Power & Light Company, according to announcement by S. P. Cobb, resident engineer of the Phoenix Utility Company. The new benches will be completed about Feb. 5, and three weeks will be required to dry them out and have ready for making gas.

The three benches will have a capacity of approximately 180,000 cu. ft. per day, as compared with the maximum of 150,000 cu. ft. now manufactured. Work of tearing out the old benches in order to replace them with entirely new ones will start as soon as those now under construction are completed.

It was asserted that in order to carry on the work without interruption, a wooden building was erected on the inside of the new brick structure to house the equipment. The brick building is 48 by 32 ft. and is a valuable addition to the gas plant, officials assert. New purifying equipment was placed in use during the past week and insures a cleaner gas.

The street mains will be completed between Feb. 15 and March 1, officials state, and everything will be in readiness for increased service. The work of laying the mains is about 80 per cent completed; in fact, it is asserted approximately 80 per cent of the entire project, which will cost about $150,000, has been finished.

Gas Plant Improvements

Stone & Webster, Inc., of Boston, have awarded contract to the U. G. I. Contracting Company, of Philadelphia, for the installation of two eleven-foot sets of carbureted water gas apparatus at the plant of the Fall River (Mass.) Gas Works Company. These sets will be of the U. G. I. cone-top type, hydraulically equipped, and will have the other modern appurtenances usual to U. G. I. apparatus.

The Rockville - Willimantic (Conn.) Lighting Company contemplates additional improvements to its plant in Willimantic and has awarded a contract to the U. G. I. Contracting Company, of Philadelphia, in that connection.

Stone & Weber have placed order with the Stacey Manufacturing Company, of Cincinnati, for a two-lift 300,000 cu. ft. capacity holder and four thirty-foot diameter round steel purifiers, to be installed at Fall River, Mass. This installation is part of considerable other work contracted for the Fall River plant.

Another Big Gas Well

Oil City, Pa.—The largest gas well yet completed in the Pine Hollow gas field in Clarion County, Pennsylvania, has just "come in." It is the largest gas well completed in western Pennsylvania in many years and is good for 12,000,000 cu. ft. per day. It is said that the highest price ever paid for gas at the well, 17 cents per thousand cubic feet, is being given the owners.

Twin-City Utility Plans to Spend $125,000 for Improvements

Champaign, Ill.—At a recent meeting of the board of directors of the Urbana & Champaign Railway, Gas & Electric Company, W. H. Redard, the superintendent, was authorized to spend more than $125,000 on improvements in the different departments. Every department is to come in for its share of improvements, besides the money usually appropriated for maintenance.

The greatest and probably the most evident improvement will be made in the gas works where a large purifier of the latest type will be installed. The new machine is capable of handling the entire capacity production of the plant. A large exhauster will also be installed.

An eight-inch booster line is to be laid in order to give uniform pressure to residents of certain sections of the city. The expenditure for this will be nearly $40,000. The consumption of gas in Champaign and Urbana is said to have increased more than 25 per cent in the past two years and even though added mains and improvements were being built at all times, the best service could not be given without the installation of the booster main.

U. S. Exposition Building at Rio to Be Built at Once

The contract for the construction of the exposition building to house the exhibits of the United States at the great Brazilian Exposition next September has been awarded to Dwight P. Robinson & Co., which already has large construction work under way for the Brazilian Government in Northeastern Brazil. Representatives of the company and of Frank L. Packard, architect, of Columbus, who will design the building, sailed recently for Brazil to begin the work at once.

The exposition will open at Rio de Janeiro on Sept. 7, and will commemorate 100 years of Brazilian independence.

It was recently announced at the White House that the American Building would be of permanent construction and so designed as to permit of its being converted into an embassy for this country's diplomatic representative after the close of the exposition.

Personal Notes

W. RAWSON COLLIER, general sales manager for the Georgia Railway & Power Company since 1912, has resigned his position to accept an important post with the Central Hudson Gas & Electric Company, of Poughkeepsie, N. Y. His brother, C. A. Collier, who has been assistant sales manager for some years for the Georgia Company, has been promoted to the past of general sales manager. Mr. Collier is well known to public utility officials throughout the country as an electrical engineer acquainted with all features of gas and electric service. During 1919 and 1920 he acted as both sales and operating manager for the Georgia Company, having charge of all sales of electricity and by-products of the gas plant as well as of the operation of the gas and power plants. During the war he served for a time as a representative of the priority committee of the war industries board, and also served on the fuel administration in charge of the public utilities in the Southeast.

G. M. MILLER, superintendent of electric distribution for the Louisville Gas & Electric Company, has been elected president of the Electric Club of Louisville.

A. G. BUTLER, construction superintendent of the Louisville Gas & Electric Company, has been elected to the presidency of the Louisville Engineers and Architects Club.

N. I. GARRISON, manager of the El Reno division of the Oklahoma Gas & Electric Company, has been elected president of the El Reno Chamber of Commerce for the fourth time.

H. O. GARMAN, national president of the American Association of Engineers, has announced the establishing of a private practice in consulting engineering and the management and operation of public utilities, in Indianapolis, Ind. During his fourteen-year term as chief engineer of the Public Service Commission and the Railroad Commission of Indiana, Mr. Garman valued more than $300,000,000 worth of Indiana utilities.

PAUL WARWICK, assistant to Lincoln K. Starr, manager of the public relations department for the Georgia Railway & Power Company and the Atlanta Gas Light Company, has been elected executive secretary of the Georgia Committee on Public Utility Information. Mr. Starr was formerly secretary but resigned some weeks ago. To accept the new post Mr. Warwick has resigned from the public relations department of the Atlanta Company.

H. D. MILLER has been appointed manager of the new-business department of the Western States Gas & Electric Company, Stockton, Cal. Mr. Miller has been with the company for some time in other capacities.

H. E. BAUER, of the securities department, Oklahoma Gas & Electric Company, at Drumright, has been elected by the Lions' Club as its representative to the Drumright Community Council.

H. A. JOSLIN, manager of the Mountain States Power Company, at Dallas, Ore., has been elected a director of the Dallas Commercial Club for a fourth term.

W. J. BROWN, for fifteen years with the Oklahoma Gas & Electric Company, has been promoted to the position of Chief Engineer of the Oklahoma City power plant of that company.

W. H. TAYLOR, of Omaha, Neb., nationally known in public utility circles, has been appointed executive assistant of the Georgia Railway & Power Company, of Atlanta, according to an announcement by H. M. Atkinson, chairman of the board of directors. He will serve in the capacity as assistant to the chairman of the board and to Preston S. Arkwright, president of the company. For seven years Mr. Taylor has been president of the Omaha Gas Company, where he had broad experience in consulting engineering work and in rate matters in the active operation of the gas and electric properties.

GEORGE N. ROOKER, manager, Richmond division of the Western States Gas & Electric Company, has been appointed to membership on the City Planning Commission of Richmond, Cal.

C. F. NOBLE, president, and all directors of the C. F. Noble Oil & Gas Company have resigned, and an entirely new board comprised of prominent Michigan bankers and business men have been elected. The new directors are T. B. Preston, president of the State Savings Bank of Iona; J. H. Holland Moritz, cashier of the Bank of Saginaw; Geo. H. Kirschner, president of the First State Bank of Detroit; C. S. Avery, president of the Drake Avery Company; J. B. Webbe of Simmons Hardware Company, of St. Louis; W. H. Beamer and Judge Jones, of St. Louis.

FRANK L. BUTLER, of Atlanta, has been appointed general operating manager in full charge of the operation of the electric, gas and steam heating departments for the Georgia Company. He will handle all details in the operation of these departments so far as public service is concerned, succeeding W. H. Glenn, who resigned some months ago.

PHILLIPS MCGOVERN, foreman with the Nashville Gas Company, was overcome by gas on Jan. 26, while working in the basement of the Martha Washington Candy Company in that city. Mr. Govern was discovered by some workmen who had gone to the place with him. He was taken out and the pulmotor was used on him. After reviving somewhat he got up and started to walk but collapsed. He was taken to the City Hospital and there bled. His blood was black and smelled strongly of the gas. His recovery was in doubt for a while but he was soon enabled to leave the hospital.

JAMES A. PERRY, of Atlanta, a member of the Georgia State Railroad Commission, is being considered by President Harding to fill a vacancy on the Interstate Commerce Commission. Prominent men of the South are urging that Mr. Perry be given the appointment. Mr. Perry is well known to gas company officials throughout the country as the president of the National Association of Public Utility Commissioners. His term as a member of the Georgia commission expires next August but he has already announced his intention of being a candidate for re-election.

A. E. BLAKE, Pittsburgh manager of the United Gas Improvement Company, Philadelphia, was the speaker at a meeting of the Pitts-

burgh Foundrymen's Association and spoke regarding the various methods of producting manufactured gas. He could see no good in the present-day gas producers, which he declared were relatively as wasteful of coal and heat as the beehive ovens were of coal and useful by-products, while admitting that the coal reserves of the country were ample for centuries to come, it was not too soon to begin thinking of the conservation. He strongly urged the use of other means of gasification than the producer. It was asserted that producer gas contained so much nitrogen as to decrease very materially its efficiency and it was pointed out that since it could not be sent great distances the furnaces had to be nested close to the producers. The gas must be low in sulphur, he insisted, to avoid the spoiling of heats, claiming that on an average one per cent of open hearth heats were being spoiled by the use of poor producer gas. Coal and water gas installations were advocated.

THE COMBUSTION ENGINEERING CORPORATION has announced the appointment of W. C. Stripe, formerly engineer of their Philadelphia office, to take charge of the new branch office at Pittsburgh. Otto de Lorenzi, test engineer, has been transferred from the New York office to the Chicago office.

Public Utilities Dept. Decides Adversely on Capitalization of Premiums

Boston, Mass.—After long and careful consideration, the State Department of Public Utilities, in a special report to the Legislature, filed with the clerk of the House on Jan. 25, decides adversely on the proposed legislation providing for the capitalization of premiums by gas and electric companies.

When the Burdett capitalization of premiums bill was rejected by the Legislature last year, an order was adopted providing for a thorough investigation of the subject by the Utilities Department. In now deciding against such legislation, a majority of the commissioners recommend the repeal of the premium law, which has been on the statute books since 1894, and urge adoption of a bill to provide that in new issues of stock the utilities department "may, as a condition of the stock, impose such limitations and restrictions upon the dividends to be thereafter paid by the company and for such a period as it may determine."

Regarding the premium law as it stands to-day, the majority of the commissioners say:

"The repeal of the premium law would not involve any conversion into shares of premiums heretofore paid or any revaluation of the companies' properties. Nor would it even prevent the companies from issuing new shares at premiums. Its whole effect would simply be to abolish the necessity of premiums in the future."

The minority are not convinced, "in view of the situation as it is instead of what it ought to have been," that the law has worked so disadvantageously or unfairly as to warrant their recommending a change.

Chairman Attwill, in the course of his report, expressed the opinion that the decision of the United States Supreme Court holdings that the regulation of rates of a public utility is a judicial as well as a legislative question, has been unfortunate to both the utilities and the public.

As a remedy, he suggests "that provision be made by which the utilities, in exchange for legislation which will enable them to finance their undertakings, will agree to forego their constitutional rights in relation to rates and rely upon the good faith of the Commonwealth for just treatment. I think the Legislature might well consider the advisability of a readjustment of the capital stock of gas and electric companies in exchange for an agreement by the companies that the State shall have freedom in the future to regulate their rates and affairs. Such an arrangement would remove the objections now apparent to the payment of rates which give to the corporations more than a fair return as any surplus then acquired would be held for the benefit of the public and would be a fund upon which the public would not be required to pay a return."

Commissioner Everett E. Stone, in a minority report, said that he does not agree with his associates relative to the repeal of the premium law and allowing all gas and electric companies hereafter to issue stock at par.

"Many of these companies' stocks," he said, "are now selling in the market between $150 and $200 a share, and the companies have many millions of dollars in floating debt which they undoubtedly will ask to capitalize. To permit these companies to put out new issues at par I believe would tend to create a feeling between these companies and the general public which is undesirable, or both."

The department, in conclusion, files the following bills:

Authorizing a gas or electric company to issue new shares at a price less than par, if it deems that such new shares cannot be disposed of to the stockholders or others at or above par. Also authorizing the sale at such price less than par as may be authorized by the Utilities Department of any shares sold at public auction, should the shares be not taken previously by the stockholders entitled to take them.

Providing that gas, electric and water companies, in the agreement of association, shall state the par value of the shares, the par value to be in $100, $50 or $25, as the Utilities Department shall authorize.

That in the disposition of new capital stock the Utilities Department "may, as a condition of its approval of the stock, impose such limitations and restrictions upon the dividends to be thereafter paid by the company and for such a period as it may determine."

Providing that in the issuance of bonds of the companies in question, the companies may fix "such a rate as the department may approve." At present the rate is limited to 6 per cent.

High Gas Rates Lead Glass Plants to Consider Merger

Clarksburg, W. Va.—Tentative plans for a merger of hand window glass manufacturing plants of Clarksburg and near-by cities, involving upwards of one million dollars, are being discussed by representatives of the plants. High gas rates and high wage scales are assigned as the primary factors in the discussed plan, the possibility of moving the plants to another part of the country where fuel rates are not so high are being considered.

COLUMBIA GAS & ELECTRIC COMPANY declared the regular quarterly dividend of $1.50 a share, payable Feb. 15 to stock of record Jan. 31.